



Australian Government
Civil Aviation Safety Authority

GUIDE FOR BALLOONS AND HOT AIR AIRSHIPS



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CASA is responsible for the safety regulation of civil air operations in Australian territory, and for the regulation of Australian registered aircraft outside Australian territory.

For further information, visit CASA's website casa.gov.au

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About this guide

Safety is our priority. To keep you, others and our operating environment safe, it is essential to know and understand the rules that apply to the operation of a Part 131 aircraft.

This Civil Aviation Safety Authority (CASA) guide for balloons and hot air airships summarises and restates in plain English:

- › Part 91 of the Civil Aviation Safety Regulations (CASR)
- › Part 91 Manual of Standards (MOS)
- › Part 131 of the Civil Aviation Safety Regulations (CASR)
- › Part 131 Manual of Standards (MOS).

It also incorporates other regulations (CARs and CAOs) that apply to balloon and hot air airship crew and operators. Relevant guidance materials and advisory documents current at the time of printing have also been incorporated.

This guide combines and reorders this information to make it easier for you to find, understand and apply the rules.

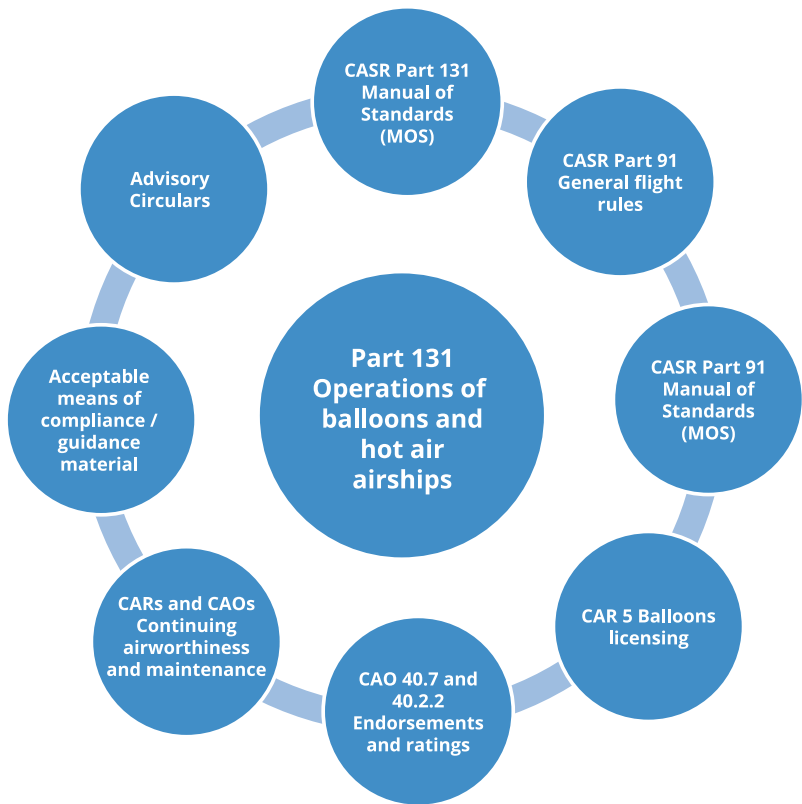
By following this guide, it is expected you will comply with the general operating and flight rules as well as the other rules applicable to balloons and hot air airships.

The guide provides references to the corresponding legislation so you can easily refer to the full text if you wish. The current legislation can be found on the [Federal Register of Legislation website](#).

We are committed to providing you with accurate, consistent and clear information to help you understand your legal obligations. The information contained in this guide was correct at the time of publication but is subject to change without notice. You should ensure you are using the most current version of the guide, which can be found on the CASA website. Please visit the CASA website regularly for updates.

The following are incorporated into this guide:

Figure 1: Inclusion within this guide



What Part 131 covers

Part 131 and the associated MOS applies to lighter-than-air aircraft. These are:

- › hot air balloons
- › hot air airships
- › gas balloons
- › mixed gas/hot air balloons
- › tethered gas balloons that carry passengers but are not equipped for free flight (Subpart 131.Z only).

To enhance safety, the rules focus operators on accident prevention through an understanding of human and organisational factors.

What Part 91 covers

Part 91 and the associated MOS cover the general operating and flight rules for all Australian aircraft in Australian territory.

This guide includes the Part 91 regulations that:

- › specifically apply to balloon and hot air airship operations – Appendix A and integrated throughout the guide
- › have been disapplied or ‘turned off’ and do not apply to Part 131 aircraft – Appendix B
- › have not been disapplied, but are not applicable to balloon and hot air airship operations (for example, simulating engine failure in multi-engine aircraft) – Appendix C.



Image | Alan Shore

Who this guide is for

The rules in CASR Part 131 and the Part 131 Manual of Standards (MOS) apply to balloon and hot air airship operations:

- › commercial passenger carrying (balloon transport that was previously known as charter operations)
- › specialised balloon operations (previously known as aerial work)
- › private activities for sport and recreation
- › commercial balloon flying training.



Balloon transport operations require the issue of an Air Operator's Certificate (AOC). This certificate authorises you, as the operator, to carry out specified balloon transport operations.

Changes as at 2 December 2023

Prior to 2 December 2023, the Australian Ballooning Federation (ABF) was a sport aviation body that managed recreational activities and private pilot authorisations (known as private pilot certificates).

From 2 December 2023, CASA assumed the administration of private recreational balloon activities from the Australian Ballooning Federation. CASA now issues all pilot authorisations for private pilots as permits under Civil Aviation Order 95.54.

Where this guide refers to any authorisations issued by an ASAO, you should now refer to CASA and CAO 95.54.

From 2 December 2023, private pilot (balloon) permits are issued by CASA. Your private pilot (balloon) permit has the same privileges and limitations and you must continue to abide by any conditions of your certificate or permit.

If, immediately before 2 December 2023, you held a certificate or approval issued by the ABF:	Then, on and after 2 December 2023, you are deemed to hold (unless the permit expires, or is revoked by CASA):
Student pilot (balloon) certificate	Student pilot (balloon) permit
Private pilot (balloon) certificate	Private pilot (balloon) permit
Instructor private pilot (balloon) certificate restricted	Instructor private pilot (balloon) permit Grade 2
Instructor private pilot (balloon) certificate unrestricted	Instructor private pilot (balloon) permit Grade 1
Radio operator (balloon) certificate	Radio operator (balloon) permit

Permits that may be issued by CASA on or after 2 December 2023:

- › Student pilot (balloon) permit
- › Private pilot (balloon) permit
- › Radio operator (balloon) permit
- › Instructor private pilot (balloon) permit Grade 2
- › Instructor private pilot (balloon) permit Grade 1
- › Examiner private pilot (balloon) permit
- › Permit to carry a hang glider outside a Part 131 aircraft

Quick Guide:



Chapter 1 – Regulatory overview (preliminary rules)

Includes Part 131 specific terminology, approval requirements and conditions of Parts 91 and 131.



Chapter 2 – Air Operator's Certificates (AOC) and authorised operations

For the AOC holder: how to apply for an AOC and your on-going obligations including other authorisations for specialised operations.



Chapter 3 – Organisation

AOC organisation requirements: exposition, record keeping, other safety-related systems.



Chapter 4 – Operations

For the operator and pilot: requirements regarding documentation, equipment, operational control and flight preparation (including fuel considerations).



Chapter 5 – Flight rules (in the air and on the ground)

Assisting the pilot and other crew to prepare, plan and safely fly aircraft in a variety of circumstances and locations.



Chapter 6 – Managing your training and qualifications

Training and qualifications requirements under Part 131 including training records, types of qualifications, minimum experience levels, training, recency and assessments (checks for the issue of certificates or licences).



Chapter 7 – Commercial balloon licensing

The requirements and privileges for a commercial pilot (balloon) licence (CP(B)L), a balloon flight radio operator licence and associated balloon flight crew endorsements and ratings. It also outlines the application processes. These regulations are in CAR Part 5.



Chapter 8 – Continuing airworthiness

Continuing airworthiness and on-going maintenance requirements, record keeping and who may conduct repairs and maintenance.



Chapter 9 – Administrative rules

Operating foreign aircraft here in Australia and Australian aircraft overseas, including special certificates or permits.



Appendices

Applicability of Part 91 to Part 131 aircraft. Training syllabuses. Abbreviations and acronyms, and definitions

How to use this guide

In this guide, certain words have been defined to avoid repetition and improve readability.

Where we refer to a 'pilot', this means any flight crew member and not necessarily the pilot in command.

Where we refer to an 'AOC holder', this means a person or organisation that holds an Air Operator's Certificate (AOC) for a balloon transport operation.

Regulations specify offence provisions that may apply solely or jointly to the pilot, a person or an operator. Where a regulation states that the pilot in command (PIC) and operator each contravene a regulation, this guide expresses the responsibility as being that of the pilot and/or the operator. A MOS provision associated with a regulation may provide more detail on who is responsible to do or not do certain things.

For improved understanding, the guide includes exceptions, notes and comments.

Exceptions – *certain regulations set out requirements that do not need to be followed in specified circumstances. You must read these exceptions to understand the requirements fully.*

Notes – these are included to provide additional information or context.



Provide a more detailed explanation and are generally based on CASA's Advisory Circulars (AC) and other guidance material.

In addition, many defined terms are new so the reader must make reference to the dictionary. For example, authorised aeronautical information (AAI) has a more expansive meaning than the term Aeronautical Information Package (AIP) with which readers may be familiar.

A list of abbreviations and acronyms can be found in Appendix E and a full list of definitions in Appendix F.

Where we do not define a word in this document, consider its meaning to be that given in the regulations, or if none is given, the Macquarie Dictionary.



Image | Jay Schesser

The following terminology table has been created to improve readability:

Term	Meaning
aircraft (Part 131 aircraft)	a Part 131 aircraft meaning a crewed, free balloon or a hot air airship
airship	a powered, lighter-than-air aircraft
approval	an approval provided in writing by CASA under Part 131.035 or Part 91.045 <i>For a foreign-registered aircraft operating in Australian territory, approval means that given under the laws of the state of the registry of the operator of the aircraft. Contact your closest CASA regional office for guidance on approvals. See the CASA website for regional office contact details.</i>
Australian balloon	a balloon that is an Australian aircraft (see definitions table at the end of this guide)
authorisation	a Part 131 pilot authorisation, which includes: <ul style="list-style-type: none"> › a commercial pilot (balloon) licence or › a CAR certificate of validation or › an authorisation from a Part 131 Approved Self-Administering Organisation (ASAO) that permits the holder to operate a Part 131 aircraft
balloon	an unpowered, lighter-than-air aircraft
CAR	Civil Aviation Regulations 1988
CAR certificate of validation	a certificate issued under CAR 5.27 which validates an overseas balloon authorisation
CASR	Civil Aviation Safety Regulations 1998 (References to CASR are to the Part 131 CASR, unless otherwise stated)
CAO	Civil Aviation Orders
CAO 40.2.2	Section 40.2.2 of the Civil Aviation Orders – Balloon grade of night VFR rating
CAO 40.7	Section 40.7 of the Civil Aviation Orders – Aircraft endorsements (balloons) and flight instructor (balloons) ratings
equipment	any reference to equipment being required, fitted, carried or accessible means equipment which is operative or serviceable
exposition	the terms operations manual and exposition are synonymous
may	indicates the provision is optional
mixed balloon	a crewed, free balloon that derives its lift from a combination of heated air and non-flammable lighter than air gas
MOS	Manual of Standards (References to MOS provisions are to the Part 131 MOS, unless otherwise stated)
must	indicates an obligation or necessity (i.e. a mandatory requirement)
operations manual	the terms operations manual and exposition are synonymous
operator (of an aircraft)	if the operation of the aircraft is authorised by an AOC – the holder of the AOC or if the operation of the aircraft is not authorised by an AOC – the person, organisation or enterprise that makes the aircraft available to the aircraft's PIC for a flight (CASR Dictionary) <i>See also section 1.1.</i>

Term	Meaning
Part	unless otherwise specified refers to a part of the CASR
Part 21	Part 21 of CASR (Certification and airworthiness requirements for aircraft and parts)
Part 31	Part 31 of CASR (Airworthiness standards for crewed, free balloons) (See chapter 8 in this guide.)
Part 91 MOS	Part 91 (General Operating and Flight Rules) Manual of Standards 2020
Part 131 MOS	Part 131 Balloons and Hot Air Airships Manual of Standards 2024
person	can include the pilot, an operator, a passenger, a ground support person or another person
a pilot	refers to any flight crew member (not necessarily the pilot in command)
PIC (pilot in command)	the pilot designated as being in command and charged with the safe conduct of the flight
qualified	a person who holds a qualification or authorisation issued by CASA under Part 5 of CAR or a Part 131 ASAO unless otherwise stated <i>For a foreign registered aircraft operating in Australian territory, qualified means a qualification attained, or authorisation under, the laws of the state of registry of the aircraft operator.</i>
radio	as with other equipment, which is required to be fitted or carried, a reference to radio or a radio communications system means one which is operative <i>Where a radio is required the pilot must be qualified to use it (see 91.625).</i>
regulations	in general, this refers to the Australian civil aviation legislation noting that specific reference is made to the Federal Aviation Authority (FAA) (United States) regulations, and European Aviation Safety Agency (EASA) (European) regulations where necessary
subregulation	unless otherwise specified, a subregulation of Part 131 or Part 91
Subpart	unless otherwise specified, a subordinate part of Part 131 or Part 91



To the extent possible, the terms crewed/uncrewed in this guide are used as the gender-neutral terms for manned/unmanned (which are used in in the regulations and the MOS). This reflects the intention to phase out the terms manned/unmanned from the regulations and MOS.

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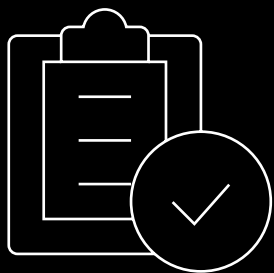
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CHAPTER 1

REGULATORY OVERVIEW (PRELIMINARY RULES)



Chapter 1 – Regulatory overview (preliminary rules)

This chapter sets out and explains the applicable regulations for balloons and hot air airships that are included in this guide. It also sets out Part 131-specific terminology. A more comprehensive definitions section is contained in Appendix F of this guide.

This chapter includes:

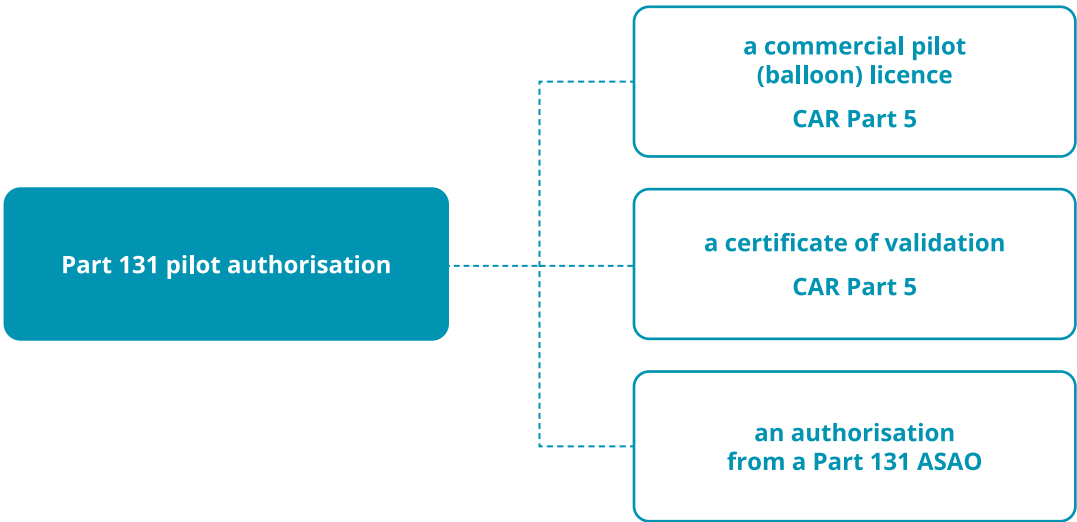
- › Part 131-specific terminology
- › the approvals required for Part 131 aircraft and operations
- › the role of the Manual of Standards (MOS)
- › the requirements that must be met before an Australian aircraft may fly.

1.1 Part 131-specific terminology

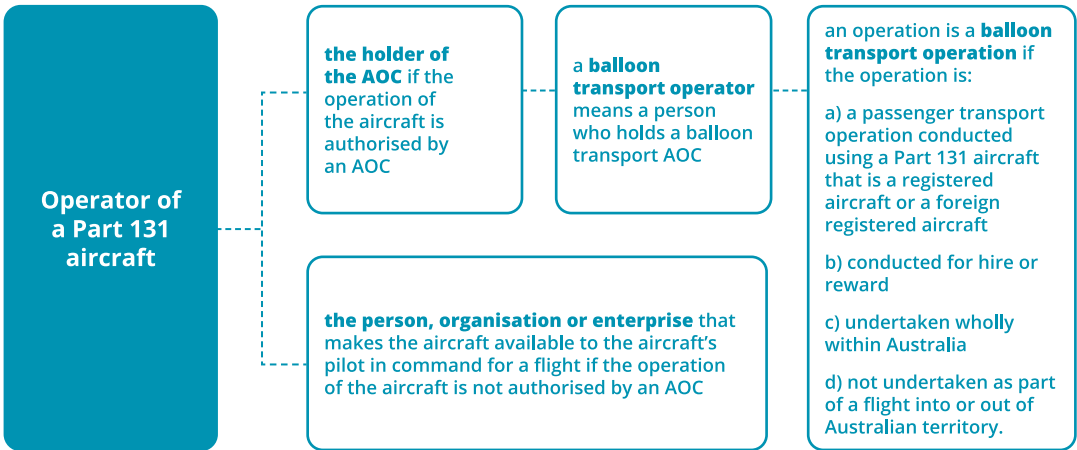
Table 1: Part 131-specific terminology

Regulation	Term	Meaning
131.005	Part 131 aircraft	a crewed, free balloon or a hot air airship
131.005	Part 131Z aircraft	a permanently tethered gas balloon equipped to carry one or more persons
131.010	Balloon transport operation	a passenger transport operation using a registered Part 131 aircraft and: <ul style="list-style-type: none">› conducted for hire or reward› undertaken wholly within Australia› not a flight in or out of Australian territory
131.015	Balloon transport AOC	an AOC that authorises a Part 131 aircraft for a balloon transport operation
131.015	Balloon transport operator	a person who holds a balloon transport AOC
131.020	Specialised balloon operation	<ul style="list-style-type: none">› is conducted using a Part 131 aircraft› is not a balloon transport operation› includes one or more of the following:<ul style="list-style-type: none">» carriage of specialised instruments, indicators, equipment, or systems that affect the aircraft's flight characteristics» carrying a load outside the aircraft (except a hang glider)» advertising, film making or television production only or mainly for hire or reward» operations in or out of Australian territory (131.025)» performed in other circumstances referred to in the MOS (At time of printing there are no other circumstances – refer to the MOS when required)
131.025	Recreational activity	all activity that is not: <ul style="list-style-type: none">› a balloon transport operation› a specialised balloon activity› commercial purpose flight training› performed in other circumstances referred to in the MOS (At time of printing, there are no other circumstances specified as non-recreational in the MOS.)

To further clarify specific terminology that is used throughout this guide the following diagrams have been included for a Part 131 pilot authorisation and a Part 131 operator.



Where we refer to an 'AOC holder' in this guide, we are referring to a person or organisation that holds an AOC for balloon transport operations.



1.2 Approvals required and conditions

You may need specific approvals to conduct certain activities. They may be part of your air operator's certificate (AOC) or may be issued separately from an AOC.

Table 2: Approvals and conditions

Regulation	Activity	Conditions and details
131.035	Various activities	If a provision in Part 131, or the Part 131 MOS refers to holding an approval under this regulation, you may apply in writing to CASA for the approval.
131.580	Recreational activity	The pilot must be authorised.
131.040	Balloon transport operation	An AOC is required.
91.045	Various activities	If a provision in Part 91 of CASR or the Part 91 MOS refers to holding an approval under this regulation, you may apply in writing to CASA for the approval.
91.050	Special certificate of airworthiness	An authorised person can provide this approval.
91.050	Special flight permit	An authorised person can provide this approval.

Note: Regulations 91.045 and 131.035 both state that an approval must be applied for in writing to CASA. CASA must then grant the approval if the application meets the applicable standards and regulation 11.055 Grant of authorisation. Application forms can be found on the forms and templates page on the CASA website.

1.3 Issue of Manual of Standards (MOS) for Part 131

(131.055)

CASA prescribes standards in a MOS for Part 131 where:

- › it is required or permitted by the regulations
- › it is necessary or convenient for carrying out or giving effect to Part 131.



A MOS allows CASA to keep the standards up to date. This meets the demands of the ever-changing environment while retaining the legislated change process that includes consultation.

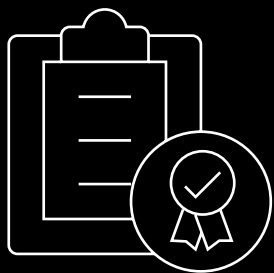
1.4 Requirements to be met before Australian aircraft may fly (91.145)

Before flight, the pilot in command (PIC) must ensure the aircraft:

- › is registered
- › has a nationality mark and a registration mark in accordance with Part 45 Display of nationality and registration marks and aircraft registration identification plates
- › has a certificate of airworthiness or special flight permit (if required)
- › complies with any condition set out or referred to in the maintenance release, or in any other document used as an alternative to the maintenance release
- › has all required flight crew members (FCMs) on board.



A registered aircraft is one registered under Part 47 Registration of aircraft and related matters. To register an aircraft, visit the CASA website: casa.gov.au/aircraft/aircraft-registration/register-your-aircraft.



CHAPTER 2

AIR OPERATOR'S CERTIFICATES (AOCS) AND AUTHORISED OPERATIONS

Chapter 2 – Air Operator's Certificates (AOCs) and authorised operations

An Air Operator's Certificate (AOC) is a certificate authorising you, as the operator, to carry out specified balloon transport operations. Balloon transport operations are conducted for commercial purposes i.e. for remuneration or other consideration. This includes operations available to the public or those performed under a contract with a customer and includes transporting passengers, and/or cargo.

It is important to note:

- › all balloon transport operations require an AOC in order to conduct operations
- › recreational balloon operations do not require an AOC in order to conduct operations
- › specialised operations may be conducted under an AOC
- › tethered operations may be conducted under an AOC.

You must conduct your operations in accordance with your AOC. The AOC approval is based on safety standards and operational requirements specified in the regulations.



For commercial balloon flying training operations with a crewed, free balloon in Australia, a Commercial Balloon Flying Training AOC is required, granted under regulation 206 of the Civil Aviation Regulations 1988 (paragraph 206(a)).

This chapter sets out the requirements for applying for, or changing, an Air Operator's Certificate (AOC) and details the various types of balloon operations. These elements are expanded in this chapter:

- › applying for an AOC
- › requirements for an AOC
- › making changes to an AOC or exposition
- › specialised balloon operations
- › recreational activities
- › tethered gas balloons
- › pilot authorisations.

2.1 How to apply for an AOC

Balloon transport AOC required to conduct balloon transport operations (131.060)

An operator must hold a balloon transport AOC to conduct a balloon transport operation.



A balloon transport operation (131.010) is a passenger transport operation using a registered Part 131 aircraft which is:

- › conducted for hire or reward
- › undertaken wholly within Australia
- › not a flight in or out of Australian territory.

Application for balloon transport AOC (131.075)

An AOC application must include:

- › the proposed exposition, signed by the CEO or proposed CEO
- › the applicant's name (including any operating or trading name), contact details and ABN (if any)
- › the address of the operational headquarters if different from the contact details
- › a statement from the CEO (or proposed CEO) that they will hold that position if an individual
- › the name of each of the directors of the corporation (where applicable)
- › the ACN and the address of the registered office (if an Australian corporation) or if not registered in Australia, the place it was incorporated or formed
- › details of the operations covered in the application
- › a written undertaking that the organisation will comply with the exposition and all relevant legislation.

Conditions for issue of balloon transport AOC (131.080)

CASA will issue a balloon transport AOC once it is satisfied:

- › the exposition complies with CASR 131.195 Content of exposition
- › operations will be conducted safely
- › operations will comply with the exposition and all relevant legislation
- › key personnel and directors (if any) are fit and proper persons
- › key personnel meet the legislated qualification and experience requirements
- › operations will comply with all continuing airworthiness legislation.

In approving the AOC, CASA considers:

- › the exposition and the operator's capacity to comply with it
- › the nature of the proposed operations
- › any relevant previous or current suspensions or cancellations

- › the corporate and organisational structures
- › any other relevant information accompanying the application.

To decide if key personnel are fit and proper persons, CASA may consider relevant:

- › criminal records
- › bankruptcy issues
- › serious behavioural problems
- › breaches of any transport or safety-critical legislation
- › verified attitudes of compliance with transport or safety-critical legislation
- › records of insolvency, receivership, or winding-up involving any key personnel
- › investigations or comments by a statutory authority involving any key personnel
- › other matters relating to the capacity to hold or be the director of a balloon transport AOC.

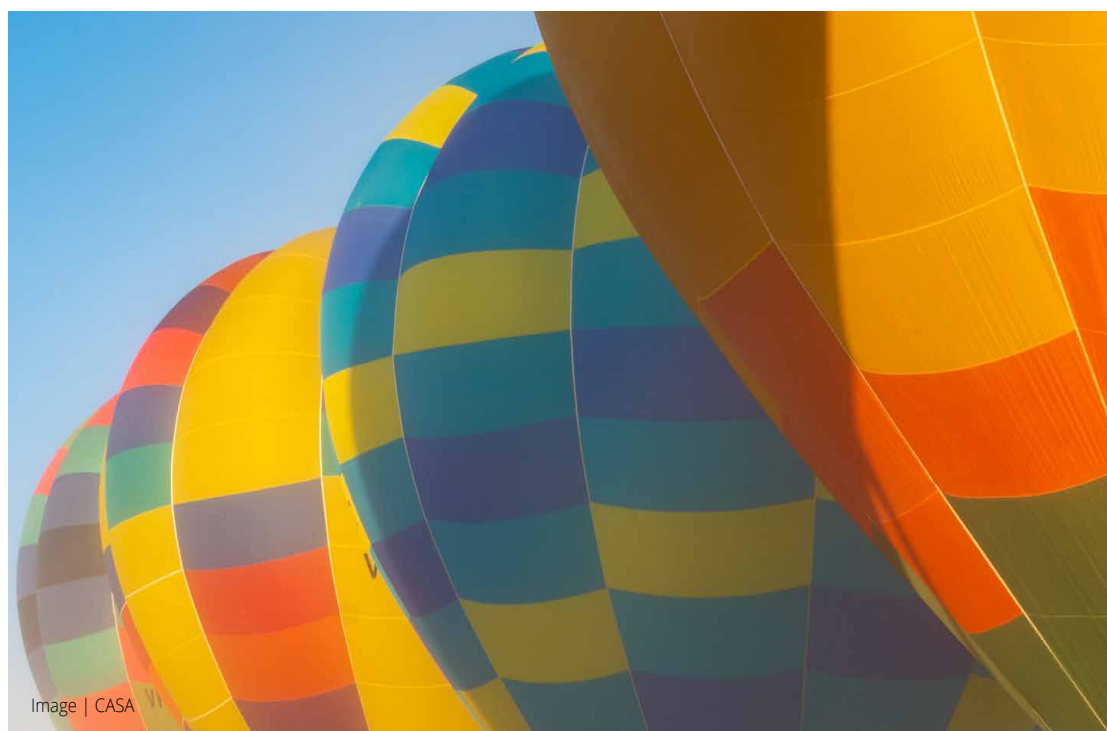


Image | CASA

2.2 Requirements of an AOC

Compliance with balloon transport AOC (131.060, 131.065 and 131.070)

A balloon transport operation must comply with the requirements of the issued AOC.

Conditions of balloon transport AOCs (131.090)

The following conditions apply to a balloon transport AOC:

- › the AOC holder and their personnel must comply with all CASA directions or obligations and any applicable legislation
- › all key personnel positions must be filled
- › the AOC holder must be the CEO of the organisation if the AOC holder is an individual
- › for aircraft operated under the AOC, the AOC holder must be the registered aircraft operator or holds an approval under CASR 131.035 (see Chapter 1 of this guide).

2.3 Changes to an AOC and/or exposition

Definition of significant change (131.030)

A significant change, means a change in relation to:

- › the location, operation, opening or closing of main operating bases
- › key personnel
- › alternate key personnel
- › formal safety-related reporting lines to key personnel
- › change processes relating to the safe conduct and management of operations
- › authorised kinds of operation
- › areas of operation
- › classes of aircraft e.g. adding a Class 2 balloon to an AOC issued for Class 1 balloons

- › any change unlikely to maintain or improve aviation safety such as changes involving:
 - › plans, processes, procedures, programs and systems
 - › key personnel qualifications, experience and responsibilities
 - › third party aeronautical or aviation safety related services
 - › aircraft registrations
 - › aircraft lease and supply arrangements
- › any other change required by CASA unless it is a largely unchanged reissue of your instrument(s).

Changes of name etc. (131.095)

The AOC holder must submit written notice to CASA and include a copy of the amended sections of their exposition if the following are changed:

- › operating or trading name
- › contact details
- › operational headquarters address (if different to your mailing address).

Application for approval of significant changes (131.100)

All significant changes must be approved by CASA. The significant change application must:

- › be in writing
- › be made before making the change
- › set out the change
- › include the changed parts of the exposition
- › follow the AOC holder's documented change management process.

Key personnel changes of 35 days or less are not a significant change and do not require CASA approval.

Changes of more than 35 days require CASA approval. In this situation the AOC holder has 7 days to apply during which the alternate position holder can act in the key personnel role.

Approval of significant changes (131.105)

CASA may approve a significant change if satisfied the requirements for an AOC will continue to be met.

When CASA approves a significant change, the amended exposition is also approved.

Changes must be made in accordance with process in exposition (131.110)

All changes to an exposition must be made in accordance with the documented management of change process within the AOC holder's exposition.

CASA directions relating to exposition or key personnel (131.115)

CASA may direct an AOC holder to:

- › remove, include or vary information procedures or instructions in their exposition
- › remove any key personnel from their position if CASA believes:
 - » the person is not carrying out the responsibilities of the position
 - » the CEO is not properly managing matters they are accountable for.

CASA directions to the AOC holder must be in writing and will state the time within which compliance is required.

Approval of exposition (131.085)

An AOC holder's proposed exposition is approved when CASA issues the requested AOC.

2.4 Dealings in relation to cancelled, suspended, varied, pending or refused civil aviation authorisations (131.235)

An AOC holder must not share or borrow the ability to perform a balloon transport operation without CASA's knowledge and approval.

AOC holders must not enter an agreement with another operator or an employee of an operator to conduct a transport operation that requires CASA approval or authorisation unless they hold an approval under 131.035. This applies only if:

- › the approval or authorisation has been cancelled (by CASA), suspended, varied, pending or has been refused
- › any part of the operation is authorised under a cancelled (by CASA), suspended, varied, pending or refused AOC.

2.5 Specialised balloon operations

Specialised balloon operations (131.325)

Specialised balloon operations require an approval under regulation 131.035 and refer to:

- › the carriage of specialised instruments, indicators, equipment or systems that affect the aircraft's flight characteristics
- › carrying a load outside the aircraft (except a hang glider)
- › advertising, film making or television production only or mainly for hire or reward
- › operations in or out of Australian territory (131.025)
- › other activities referred to in the MOS (at time of printing, there are no other activities listed).

Additional requirements for specialised balloon operations (131.330)

The MOS provisions must be complied with during specialised balloon operations. (At time of printing there are no MOS requirements.)

2.6 Recreational activities must be authorised (131.580)

A recreational activity must be authorised and conducted in accordance with a Part 131 authorisation. An AOC is not required for the conduct of recreational activities.

Recreational activities are all activities except:

- › a balloon transport operation
- › a specialised balloon activity
- › commercial purpose flight training.



An authorisation includes a pilot authorisation issued by a Part 131 approved self-administering organisation (ASAO). Recreational training is conducted in accordance with the ICAO requirements.

2.7 Tethered gas balloons

Approval required to operate (131.685)

An approval under Part 131.035 is required to operate a tethered gas balloon.

An AOC is not required for the operation of a tethered gas balloon.

Compliance with Part 131 Manual of Standards (131.690) (MOS 29.02)

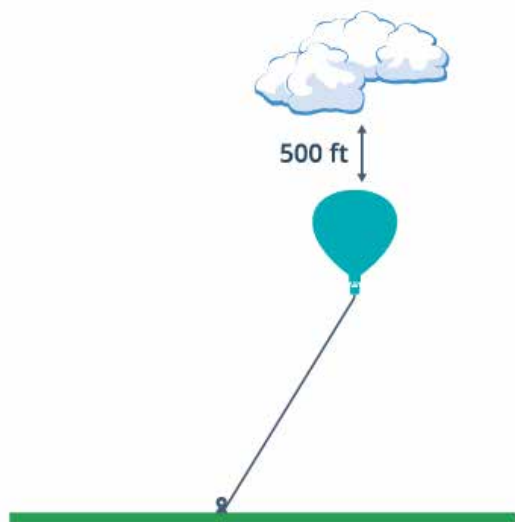
A tethered gas balloon must be operated in compliance with any requirements of the MOS. This includes operating in accordance with the aircraft flight manual (AFM) and any operator specific instruction manual (if applicable).

Anyone who operates a tethered gas balloon must be trained in accordance with the AFM and any operator specific instruction manual (if applicable).

Operation under cloud (131.695)

A tethered gas balloon must remain a minimum of 500 ft vertically below the cloud base.

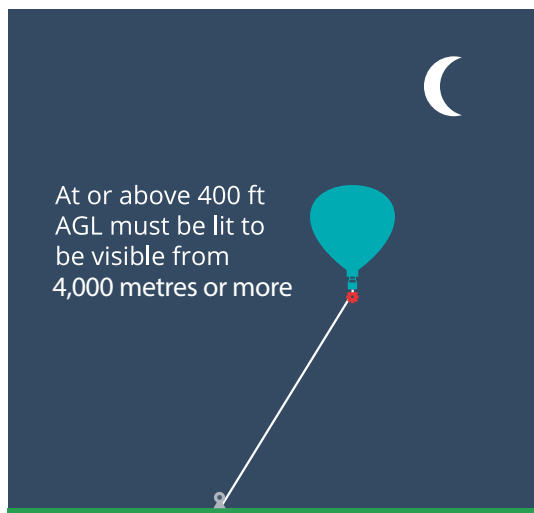
Figure 2: Operations under cloud



Operation at night (131.700)

When operated at night, at an altitude equal to or greater than 400 ft above ground level (AGL), a tethered gas balloon must be lit to be visible from a distance of 4,000 m or more.

Figure 3: Night operations



Rapid deflation device required (131.705)

A tethered gas balloon must be fitted with a device that will cause it to deflate rapidly and completely if it escapes its mooring.

What to do if balloon escapes (131.710)

If a tethered gas balloon escapes from its mooring, the person responsible for its operation must:

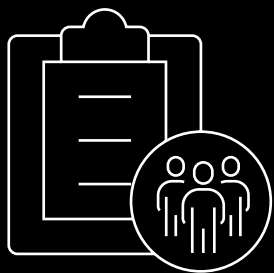
- › deflate the balloon completely using a deflation device
- › advise air traffic services:
 - » where the balloon was launched
 - » the time it broke free
 - » the balloon's direction when last seen.

2.8 Pilots must be authorised

(131.245)

The operator and PIC must ensure that every flight is conducted by at least one pilot with a Part 131 pilot authorisation. A Part 131 pilot authorisation is:

- › a commercial pilot (balloon) licence
- › a CAR certificate of validation
- › a pilot authorisation issued by a Part 131 ASAO.



CHAPTER 3

ORGANISATION



Chapter 3 – Organisation

Establishing effective systems and processes within a Part 131 organisation is crucial for compliance and effective daily operations. An exposition requires organisational procedures that manage the safe and efficient conduct of all operational procedures.

This chapter details the requirements of an organisation involving:

- › key personnel including mandated training and compliance details
- › records and documents including a comprehensive list of retention periods and requirements
- › a safety management system (reserved at the time of printing)
- › a training and checking system (reserved at the time of printing)
- › a fatigue management system
- › exposition requirements, compliance and development including a list of cross references from throughout this guide to assist in the development or review of an exposition.

3.1 Key personnel

Organisation and personnel (131.120)

The organisational structure of an AOC holder must effectively manage operations considering the size, nature and complexity of the organisation.

The key personnel of an AOC holder must abide by the exposition and Part 131.

Key personnel cannot carry out responsibilities (131.125)

The AOC holder must inform CASA if any of the key personnel cannot carry out, or are unlikely to be able to carry out, their responsibilities for a period of more than 35 days.

The AOC holder must inform CASA within:

- › 24 hours if there is not another person authorised to carry out the responsibilities for all or part of the period of absence
- › 3 days if there is another person authorised to carry out the responsibilities for all or part of the period of absence.



Image | CASA



This regulation underlines the importance of having an additional person approved to act in key personnel positions thus ensuring operational continuity and compliance. The most common alternative key person is an alternate head of flight operations.

Familiarisation training for key personnel (131.130)

The AOC holder must ensure all their key personnel have completed familiarisation training necessary to fulfil their responsibilities prior to commencing any duties.



The AOC holder must outline this training in their exposition including the syllabus and records of assessment.

Key personnel — additional qualification and experience requirements (131.175)

CASA may require key personnel to have additional qualifications or experience to those in the legislation and to:

- › undertake an examination
- › be interviewed by CASA
- › complete a training course.

For this, CASA must consider:

- › whether balloon transport operations can be safely conducted in accordance with the AOC holder's exposition and relevant legislation
- › the nature and complexity of the AOC holder's operation
- › the required leadership, management and standards setting skills
- › the person's recent aviation skills
- › if the person can exercise the privileges of the required civil aviation authorisations.

3.2 Chief executive officer (131.135 and 131.140)

Unless the AOC holder has a 131.035 approval for alternative Chief Executive Officer (CEO) experience, the CEO must have:

- › sufficient relevant experience in organisational, operational, financial and people-management of air operations to capably lead, manage and set standards to enable the operator to conduct safe operations in accordance with your exposition and the civil aviation legislation
- › a satisfactory record in the conduct or management of air operations.



The CEO sets the tone, vision, standards and culture of the organisation. CASA may grant special consideration to a CEO with other experience.

The CEO is accountable to the AOC holder and CASA for ensuring the safe conduct of operations in accordance with their exposition and relevant legislation. In particular, the CEO must ensure the AOC holder:

- › has sufficient suitably experienced, qualified and competent personnel
- › has a suitable management structure
- › is adequately financed and resourced
- › complies with the civil aviation legislation
- › implements and manages the safety management system (if any)
- › has a safety policy understood by all personnel
- › sets and maintains standards for flight and ground operations
- › informs CASA of any safety-critical changes to leasing, financing, or other arrangements for the aircraft
- › maintains all foreign registered aircraft in accordance with the law of the country in which the aircraft is registered (if applicable)
- › establishes and regularly reviews safety performance indicators and targets (if any)
- › monitors and constantly improves the exposition
- › conducts training and checking of safety-critical personnel that are non-flight crew
- › monitors key personnel to ensure they carry out their responsibilities.

3.3 Head of flying operations

(131.145 and 131.150)

The Head of Flying Operations (HOFO) of an AOC holder must:

- › hold a commercial pilot (balloon) licence endorsed for the classes of Part 131 aircraft used in the operations
- › have a satisfactory record in the conduct or management of balloon transport operations
- › have sufficient safety and regulatory knowledge to enable safe operations in accordance with the exposition and relevant legislation
- › have either:
 - » the experience required under the AOC holder's Part 131.035 approval (if any)
 - » at least 250 hours flight time as the PIC of a Part 131 aircraft and at least 2 years of experience in Part 131 aircraft operations.

The HOFO (or proposed HOFO) may be required by CASA to undertake an assessment to demonstrate their suitability for the role, which may include a free-flight assessment in a Part 131 aircraft.

The HOFO is responsible for safely managing the flying operations of the AOC holder, including but not limited to:

- › monitoring, maintaining and reporting to the CEO on operational compliance
- › ensuring flight crews are provided with the necessary information and documentation to fulfil their responsibilities
- › the allocation and deployment of aircraft and personnel
- › the provision of a reference library
- › ensuring training and checking complies with the exposition
- › ensuring any contracted Part 142 training and checking is conducted using an authorised person to conduct Part 142 training
- › ensuring any authorised Part 142 contractor is given changes to the exposition in writing.

Reserved for future use:

- › 131.155 Head of training and checking — qualifications and experience
- › 131.160 Head of training and checking — responsibilities
- › 131.165 Safety manager — experience
- › 131.170 Safety manager — responsibilities

3.4 Records and documents

Required material – reference library (131.050)

The reference library of an AOC holder can include both hard and electronic copies of documents.

The documents required are:

- › relevant civil aviation legislation and parts of the AIP
- › information for the safe operation of each class of balloon
- › any other documents specified in the AOC holder's exposition.

Copies of flight crew licences and medical certificates (131.225)




The AOC holder must keep current copies of flight crew licences and medical certificates for all their flight crew members (FCMs).

Retention periods for personnel records (131.230)

The AOC holder must retain the required records for personnel as detailed in the table below.

Note: The following includes relevant contents from regulations 131.230, 131.215 through to 131.255, 131.565 and 131.570.

Figure 4: Retention periods for operator personnel records

 <p>Flight crew</p>	<p>While the person is employed as a flight crew member</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Flight crew licence <input checked="" type="checkbox"/> Medical certificate <input checked="" type="checkbox"/> CAR certificate of validation <hr/> <p>From the time the activity is completed until 5 years after the person ceases employment</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Balloon class endorsement <input checked="" type="checkbox"/> Induction assessment <input checked="" type="checkbox"/> Area familiarisation training and checking <input checked="" type="checkbox"/> PIC transition training course and checking <input checked="" type="checkbox"/> Recurrent training and checking <input checked="" type="checkbox"/> Recent experience <input checked="" type="checkbox"/> Emergency and survival equipment training <input checked="" type="checkbox"/> Training and qualifications for specific operations <input checked="" type="checkbox"/> Safety management system training (if required)
 <p>Safety critical personnel</p>	<p>From the time the training is conducted until 5 years after the person ceases employment</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Safety management system training (if required)
 <p>Ground support personnel</p>	<p>From the time the training is conducted until 1 year after the person ceases employment</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Training record <hr/> <p>From the time the training is conducted until 5 years after the person ceases employment</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Safety management system training (if required)

Personnel training and checking records — availability of records (131.220)

The AOC holder must provide a person their training and checking record within 7 days of receiving the request. This includes requests from another operator provided the person to whom the record relates has given written permission to allow a copy of their record to be shared.

Compliance with flight manual (131.255)

All AOC holders must ensure their aircraft are operated in accordance with the aircraft flight manual (AFM) requirements and limitations.

Availability of checklists (131.260)

All AOC holders must ensure normal, abnormal and emergency checklists are available to all flight and ground crew members for the conduct of their duties.



Checklists may be in hard copy or electronic format, but if electronic, a back-up or hard copy should also be readily available to the crew.

Electronic documents (131.265)

Any document required to be carried on a flight may be carried as an electronic copy.

Note: Electronic documents for flights that begin or end outside Australian territory may not comply with the law of a foreign country.

3.5 Safety management system

Safety management system requirements (131.180) – RESERVED FOR FUTURE USE

3.6 Training and checking system

Training and checking system (131.185) – RESERVED FOR FUTURE USE

See chapter 6 of this guide for managing your training and qualifications.

3.7 Fatigue management (131.190)

The MOS requirements are reserved for now. However, an AOC holder is required to comply with the requirements of CAO 48.1 Instrument 2019.

See CASA's CAO 48.1 *Fatigue Management Plain English Guide* casa.gov.au/search-centre/plain-english-guides/plain-english-guide-fatigue-management-rules

3.8 Exposition

Content of exposition (131.195)

The exposition of an AOC holder must include:

- › the operating and trading name, contact details and ABN (if any)
- › an address (as applicable) for:
 - » the operational headquarters
 - » the main operating bases
 - » each operational facility
- › the organisational structure including formal reporting lines
- › the corporate structure (if any)
- › for key personnel (section 3.1):
 - » relevant qualifications and experience
 - » responsibilities in addition to those in the regulations
 - » the appointed person's name
 - » the name of each authorised alternate person
 - » the management process for when a key person is absent

- › specific organisational CEO responsibilities and accountabilities
- › an outline of the planned operations
- › the relevant areas of operation
- › each plan, process, procedure, program and system that ensures the safe conduct, management and compliance of the operations
- › the class, model and registration mark of each aircraft
- › the arrangements for managing continuing airworthiness
- › leasing details, or other arrangements for the aircraft, relating to operational control, continuing airworthiness, and other safety matters
- › the process for making changes, including:
 - » identifying significant and non-significant changes
 - » the method of informing CASA and personnel of the changes
- › any other CASA approvals
- › any other matter required under these regulations including:
 - » key personnel training syllabus and assessment record (section 3.1)
 - » procedures for flight preparation including weather assessments (section 4.5)
 - » carriage of fuel and ballast (section 4.7)
 - » operational variation for the carriage of fuel (section 4.7)
 - » dropping of objects and substances from aircraft (section 5.4)
 - » safe ground operations procedures (section 5.8)
 - » flights over water (section 5.11)
 - » carriage of passengers requiring special assistance (section 5.13)
 - » passenger safety briefings (section 5.14)
 - » emergency briefings (section 5.14)
 - » carriage of animals (section 5.16)
 - » maximum and minimum weight calculations (section 5.17)
 - » passenger weights (section 5.17)
 - » loading procedures (section 5.17)
 - » carriage of hang gliders (if applicable, section 5.18)
 - » qualification requirements for flight crew members (FCMs) (chapter 6)
 - » flight crew training and checking syllabuses and checking procedures (chapter 6)
 - » other personnel training and checking procedures (chapter 6)
 - » minimum experience for training and checking personnel (chapter 6)
 - » training and checking procedures for training personnel (chapter 6).

Note: The items mentioned above may be set out in one or more manuals.

Compliance with exposition by operator (131.200)

An AOC holder must comply with the requirements of their exposition.



When something in the exposition is not addressed in the legislation, or the exposition goes beyond what the legislation requires, the AOC holder is required to comply with their exposition.

Providing personnel with the exposition (131.205)

The AOC holder must make their exposition available to all personnel (whose duties are in the exposition) before they begin their duties.



Personnel may be directly employed or employed under contract or other arrangement.

Compliance with exposition by personnel (131.210)

All personnel are required to comply with the exposition of the AOC holder.

Both the AOC holder as the operator and individuals are responsible to ensure compliance.

3.9 Numbers of ground support personnel

(MOS 28.07)

The minimum number of ground support personnel required by an AOC holder is:

- › at least one for 16 or fewer passengers
- › at least two for more than 16 passengers.

During passenger loading and unloading (when possible) ground personnel must be positioned at either end of the basket unless otherwise directed by the PIC.

During passenger loading and launching operations, ground support personnel with a current certificate of proficiency must be available to ensure that passengers:

- › are loaded and unloaded safely
- › are not exposed to unnecessary hazards during normal and emergency situations.

If possible, they should also be available during landing and passenger unloading.



Image | Alan Shore



CHAPTER 4

OPERATIONS

Chapter 4 – Operations

For any Part 131 operation to function in compliance with the regulations the operator needs to consider how they will fulfill the requirements detailed in this chapter.

Included in this chapter are:

- › documentation requirements (both administrative documents and those required to be carried in flight)
- › reporting and recording information including maintenance of records (time periods)
- › normal and emergency equipment requirements
- › operational control by the operator, pilot in command and other crew
- › flight preparation requirements including flight notification, pre-flights and duties of the pilot in command
- › search and rescue requirements including information relating to emergency equipment carried in flight
- › fuel requirements including calculation of fuel required and precautions during refuelling.

4.1 Documentation requirements

Availability of parts of exposition (131.270)

All parts of an AOC holder's exposition relevant to flight and ground crew duties must be made available to the relevant crew for the flight.

Carriage of documents (131.275)

Documents to be carried on all flights (MOS 5.01)

The following documents must be carried on all flights:

- › aircraft flight manual
- › the minimum equipment list (if any)
- › for each flight crew member:
 - » a medical certificate (if required)
 - » Part 131 pilot authorisation, a commercial pilot (balloon) licence or a certificate of validation (as is applicable)



- » passport or a photographic ID issued by a commonwealth, state or territory authority or agency
- › scale maps and aeronautical charts for the route showing:
 - » certified and non-controlled aerodromes
 - » the lateral and vertical limits of controlled airspace, and prohibited, restricted or danger areas
 - » topographical information to enable navigation to a suitable landing area.

Note: An AOC holder may substitute the aircraft flight manual or sections of the aircraft flight manual if the following are carried and do not contradict the source documents:

- › an equivalent document containing the airworthiness information and instructions
- › normal, abnormal and emergency procedure checklists in another document.



Photographic ID can be an Australian driver's licence, ASIC or AVID.



Any document can be carried in electronic format if it is readily available when required (131.265).

Documents to be carried on flights that begin or end, or are conducted entirely, outside Australian territory (MOS 5.02)

For flights partly or wholly outside Australian territory the following additional documents must be carried:

- › certificates of airworthiness and registration
- › radio licence copy (if any)
- › the names of passengers including embarkation point and destination
- › cargo manifest
- › a journey log (see details below)
- › any 131.035 approval held by the crew or operator.

Journey logs (MOS 5.02, 5.03)

Before any international flight or a flight conducted entirely overseas the following must be recorded:

- › aircraft registration mark and flight number (if any)
- › date of the flight

- › FCM's name (or other means to identify the FCM) and their assigned duties
- › place of departure.

The following information must be recorded as soon as practicable after the flight:

- › place of landing
- › time the flight began and ended
- › duration of the flight
- › incidents and observations (if any) relevant to the safety of the flight.



A journey log is required by the International Civil Aviation Organization (ICAO) and can be a general declaration or other document carried that includes the necessary information.



Journey log requirements may be satisfied by using a pilot logbook and aircraft technical log.



Before using electronic document copies for flights into, out of, or within a foreign country, check the laws of that foreign country relating to the use of electronic documents.

Compliance with flight manual etc. (91.095)

An aircraft must be operated in accordance with the aircraft flight manual (AFM).

A reference to a flight manual includes an AFM or any other document that contains the aircraft's limitations and information for the safe operation of the aircraft, including all amendments and supplements and includes:

- › normal, abnormal and emergency procedures for the aircraft
- › any operating limitations, instructions, markings and placards relating to the aircraft
- › all amendments and supplements to the AFM or other documents required for the safe operation of the aircraft.



For older aircraft, the AFM may be referred to as the pilot's operating handbook (POH), owner's handbook or owner's manual.



Refer AC 91-22 Aircraft checklists for more information.

4.2 Reporting and recording information

Keeping documents with a person on the ground during flight (131.280)

An AOC holder must ensure a copy of the passenger list and a flight note is left with a person on the ground for the duration of the flight.

Reporting and recording information (131.285 and MOS 6.03)

An AOC holder must record, retain and report information relating to:

- › flight times
- › fuel usage (if fuelling from a metered supply)
- › passenger lists
- › aircraft defects
- › flight incidents
- › aircraft loading weights.

Recreational operators are only required to record their flight times and report aircraft flight defects relating to flight incidents.

Passenger lists (MOS 6.02)

For balloon transport operations, training conducted as a prescribed activity and specialised balloon operations, a passenger list must be prepared which records:

- › the aircraft's registration mark
- › the name of each passenger
- › the date
- › the estimated time of departure
- › the location of the flight.

A copy of the passenger list is to be kept for a minimum of 3 months.

A passenger list is not required if the same information is recorded elsewhere.

Records to be made – after flight (MOS 6.04)

For all activities, the following information must be recorded after each flight:

- › the flight time of all pilots permitted to operate the aircraft during flight

- › any incident that endangered (or could have endangered) the safe operation of the aircraft
- › the flight training report for flying training (if applicable).

For other than a recreational activity the records must be retained for at least 3 months.

For recreational flights, all pilot flight times and training records must be recorded according to pilot logbook or Part 131 approved self-administering organisation (ASAO) requirements.

Any aircraft defect is to be recorded in the operator's maintenance status record as soon as practicable after the flight, but no later than the start of the next flight, and include:

- › abnormal instrument indications
- › abnormal behaviour by the aircraft
- › AFM operating limits exceeded.



See Advisory Circular AC 131-01 Part 131 Manned free balloons – continuing airworthiness for further details about recording these items.

4.3 Equipment requirements

Regulation 131.460 relating to equipment and MOS Chapter 26 are detailed below.

Visibility and access of equipment (MOS 26.03)

All required equipment used by the pilot must be visible and usable from the pilot's control position in the aircraft.

Required emergency equipment must be easily accessible for immediate use in the event of an emergency.

Equipment serviceability (MOS 26.04)

Equipment that is not required on the aircraft may be unserviceable.

Equipment that is required but is inoperative is only permitted if it is either:

- › in accordance with the minimum equipment list (MEL) (if any)
- › approved by a manufacturer's permissible unserviceability.



Image | Jay Schesser

Flight instruments and approval of flight instruments (MOS 26.02 and 26.05)

For a day visual flight rules (VFR) flight the following equipment is required to measure and display:

- › pressure altitude with an adjustable datum scale calibrated in millibars or hPa and calibrated in feet (except for a flight in a foreign country that measures flight levels (FL) or altitude in metres, in which case it must be calibrated in metres or fitted with a conversion placard or device)
- › magnetic heading for hot air airships e.g. direct reading magnetic compass
- › drift direction equipment for other than hot air airships
- › time in hours, minutes and seconds either:
 - » fitted to or carried on the aircraft
 - » worn by, or accessible to, the pilot
- › vertical speed
- › free air temperature.

A hot air airship that has a maximum permissible forward airspeed less than that attainable with the engine(s) operating at full power must have equipment capable of indicating when the maximum permissible airspeed is reached.

A pressurised hot air airship must have an internal pressure indicator for use by the PIC.



Hot air balloons may use GPS equipment to display the direction of drift.

Note: For a relevant aircraft the above requirements do not apply if equipment which provides an alternative source of the same flight and navigation information is carried.



A relevant aircraft is a Part 131 aircraft engaged in a Part 131 recreational activity.



If an approval requires the issuance or re-issuance of an experimental certificate, the approval (under Division 91.T.4) may be subject to the safety standard mentioned in subregulation 11.055 (1C) of CASR.

Any equipment required to be fitted to or carried (other than surveillance equipment see section 4.3 of this guide) must be compliant with the requirements of, or approved under, Part 21 (Certification and airworthiness requirements for aircraft and parts) or Part 31 (Airworthiness standards for crewed, free balloons). Specific equipment approvals are set out in this section where applicable.

The following items do not require this compliance or approval:

- › equipment used to:
 - » display time, vertical speed, or magnetic heading
 - » indicate envelope temperature
 - » determine free air temperature
- › radio communications equipment
- › a drop or handling line
- › a trail rope
- › an independent portable light, e.g. a torch or landing light
- › a headset
- › a first-aid or medical kit
- › survival equipment and signalling equipment
- › equipment for determining drift direction.

If equipment is not required, then:

- › the equipment need not be compliant with, or approved under, Part 21 of CASR
- › for a foreign-registered aircraft, the equipment need not have been approved by the National Aviation Authority (NAA) of the aircraft's state of registry
- › information provided by the equipment cannot be used for communications or navigation
- › the equipment must not at any time affect the airworthiness of the aircraft.



This section effectively results in a balloon operating under the VFR by day to only require the altimeter displaying pressure altitude and surveillance equipment (see section 4.3 of this guide) to be Part 21 or Part 31 approved (or compliant).



For foreign registered aircraft flying in Australian airspace, equipment must be approved by the national aviation authority (NAA) of the aircraft's state of registry.

Radiocommunication systems (MOS 26.07)

All aircraft must be fitted with, or carry, radio communication systems capable of communicating:

- › on all frequencies required from any point en-route, including diversions
- › two-way, by voice
- › on the emergency frequency 121.5 MHz.

Exception: *An aircraft operating in visual meteorological conditions (VMC) by day in Class G airspace at or below 5,000 ft above mean sea level (AMSL) is not required to be fitted with, or carry, a radio except where shown in section 5.7 of this guide.*

All aircraft operating within a mandatory broadcasting area (MBA) must be equipped in accordance with the radio communications requirements above.

An aircraft may commence a flight in controlled airspace with an inoperative radio if:

- › the flight is not a balloon transport operation
- › relevant ATS agencies are informed of the inoperative radio before the flight
- › clearance is obtained from the relevant ATS agency
- › during flight in Class G airspace above 5,000 ft AMSL or in an MBA:
 - » the flight is by day in VMC
 - » the flight is in-company with another aircraft
 - » the other aircraft carries an operative radio and the PIC (who is authorised to operate the radio) makes all required radio communications for both aircraft.

Other operational equipment (MOS 21.05, 26.09, 26.10, 26.11)

Table 3: Other operational equipment required to be carried

Equipment required	Criteria	Any conditions
Fuel quantity measuring and indicating	Nil	Other than a gas balloon
Burner ignition equipment	Min 2 separate items	Other than a gas balloon
Independent fuel systems	Min 2 separate systems	For night operations in other than gas balloons
Drop or handling line	At least 25 m in length	Other than a gas balloon
Trail rope	At least 20 m in length	For free gas balloons
Pilot restraint harness	Nil	Balloon transport operations only (see below)

A pilot restraint harness:

- › If a Part 131 aircraft is fitted with an approved pilot restraint harness, it must be worn by the pilot at the controls during take-off when operating below 500 ft AGL and any landing phase, until the aircraft is secured on the ground.
- › Is recommended to be worn by the pilot at the controls throughout the flight when more than one pilot is carried (regardless of being in command or under supervision). This may significantly reduce the severity of injuries to the pilot and passengers in the event of an accident where the pilot may be ejected from the basket.

Survival equipment

(MOS 26.12 and Part 91 MOS 26.63)

An aircraft flying in or through a remote area must carry survival equipment for sustaining life in that area.

A remote area is defined as:

- › Central Australia remote area
- › Snowy Mountains remote area
- › Tasmania remote area.

Figure 5: Remote areas in Australia



Lighting systems (MOS 26.13)

An aircraft flying at night must be fitted with or carry:

- › at least two portable battery-operated lights, e.g. torches or flashlights, capable of illuminating any essential equipment required by the PIC
- › a light capable of illuminating a sufficient surface area for the aircraft to be landed in an emergency
- › a red anti-collision light that is visible from below, indirectly from above, and in all directions around the aircraft, for at least 4,000 metres.



The anti-collision light must be displayed during flight unless the PIC believes that reflection or glare from the light may cause a hazard.



Optimum visibility is obtained by suspending the red anti-collision light below the aircraft.

Supplemental oxygen must be stored and supplied by an oxygen delivery system that is either:

- › compliant with or approved under Part 21 of CASR
- › for a recreational activity approved in writing by a Part 131 approved self-administering organisation (ASAO).

Emergency Locator Transmitters (ELTs) (MOS 26.15)

If the aircraft is fitted with an ELT, it must (if activated) transmit simultaneously on 121.5 MHz and 406 MHz. The ELT must be registered with the Australian Maritime Safety Authority (AMSA).



For further information see Division 26.12 of the Part 91 MOS.

Oxygen equipment and oxygen supplies (MOS 26.14)

Regulation 131.320 – Supplemental oxygen and other equipment also applies to this section.

All flights above 10,000 ft require a 131.035 approval.

The oxygen supply and type in the table below must be available for flights above 10,000 ft AMSL.

Table 4: Requirements for supplemental oxygen above 10,000 ft

	Above 10,000 ft AMSL (balloon transport operation only)	Between FL125 and FL140	Above FL140
Flight crew members	must use supplemental oxygen continuously if impairment considered possible	after 30 minutes, must use supplemental oxygen continuously if engaged in essential duty	must use supplemental oxygen continuously if engaged in essential duty, otherwise, must have supplemental oxygen available
Passengers and flight crew not covered above	must have supplemental oxygen available if impairment considered possible	must have supplemental oxygen available	must have supplemental oxygen available

Portable emergency equipment (MOS 26.16, 26.17)

Table 5: Portable emergency equipment requirements

Equipment required	Conditions
Hand-held fire extinguisher	<ul style="list-style-type: none"> › accessible to the PIC › compliant with any Airworthiness Directive (AD) issued by CASA › if no AD is applicable, a dry powder type extinguisher of at least 1kg capacity
First aid kit (balloon transport operations only)	<ul style="list-style-type: none"> › suitable for the number of passengers carried and for the nature of the operation › readily accessible › up to date › inspected periodically to ensure the contents are fit for purpose

Flights over water (MOS 18.02, 18.03, 26.18)

Before making a flight over water where a landing in water or ditching could occur in an emergency, the PIC must identify the risks and decide whether it is necessary to carry emergency equipment. Water includes, for example, the sea, a lake, bay or estuary.



For known flights over water the operator must undertake a risk assessment and determine the appropriate risk mitigation strategies. These are to be described in the operator's exposition and when accepted by CASA form part of the operator's procedures. The operator will need to formally reassess the risk mitigations in place if circumstances change that vary the assessed risk.

Any life jacket or equivalent flotation device carried must be equipped with:

- › a whistle
- › an electric light (for night flights).

If carried, a life jacket or floatation device must be worn by each person if the aircraft is flown at or below 1000 ft above water where in the event of an emergency a landing or ditching may occur.

When not required to be worn the life jacket or floatation device must be stowed where it is readily accessible.

Surveillance equipment (MOS 26.19 to 26.30)

Unless ATC instructs otherwise, a transponder must be selected to the on position for secondary surveillance radar (SSR) response and, if available, altitude reporting must also be on in accordance with the tables below.

When flying in formation or in-company with other aircraft, only one aircraft needs to operate surveillance equipment, unless ATC requires otherwise.

An aircraft must operate only one transponder at a time.

A transponder Mode A code must be set to either:

- › the code ATC assigns
- › the standard code set out in the following table.

Table 6: Transponders – Mode A standard codes

Situation	Mode A code
Flights in class A, B, C or D airspace	3000
VFR flights in class E or G airspace	1200
Flights in class G over water at a distance greater than 15 NM from shore	4000
Ground testing by aircraft maintenance staff	2100
Emergency code – unlawful interference	7500
Emergency code – loss of radio communication	7600
In-flight emergency (unless otherwise instructed by ATC)	7700

Exception: *In an emergency, the emergency code does not have to be set if maintaining the Mode A code will result in a safer outcome.*

Pressure altitude information reported by a transponder or ADS-B OUT equipment must be determined by either:

- › a barometric encoder of a type authorised by CASA or the NAA of a recognised country in accordance with ITSO-C88a
- › another equivalent system approved under Part 21 of CASR.

Required surveillance equipment (MOS 26.21)

All aircraft must meet the surveillance equipment requirements set out in the following table.

Table 7: Surveillance equipment requirements

Operation	Class of airspace	Aircraft requirements
Any operation	FL290 and above in any airspace	At least 1 approved ADS-B OUT equipment configuration
Any operation	Below FL290 in Class A, B or C airspace	At least 1 of the following: <ul style="list-style-type: none">› approved ADS-B OUT configuration› approved Mode S transponder with Class B TABS position source device configuration› approved transponder Note: An approved Mode S transponder with ADS-B capability is not required to transmit ADS-B OUT for a VFR flight.
Any operation	Brisbane, Sydney, Melbourne, or Perth aerodrome	At least one approved mode S transponder with ADS-B capability Note: The transponder is not required to transmit ADS-B OUT for a VFR flight.
An aircraft with engine-driven electrical power generation capacity	Class E (not above FL290) Class G (from 10,000 ft to not above FL290)	At least 1 of the following: <ul style="list-style-type: none">› approved ADS-B OUT configuration› approved Mode S transponder with Class B TABS position source device or› approved transponder› an approved integrated TABS device Note: An approved Mode S transponder with ADS-B capability is not required to transmit ADS-B OUT for a VFR flight.



An approved transponder means an approved Mode A/C transponder or an approved Mode S transponder.

VFR Aircraft – Requirements for other surveillance equipment (MOS 26.22)

If an aircraft is required to carry surveillance equipment prescribed by MOS 26.21 (see previous section), the surveillance equipment must meet the requirements set out in the following table.

Table 8: Requirements for surveillance equipment, including electronic conspicuity (EC) equipment

Operation	Class of airspace	Capability and requirements
Any operation	Classes A, B, C or E (below FL290)	An approved EC device configuration Note: An EC device may be operated concurrently with a Mode A/C or a Mode S transponder (other than one that is transmitting ADS-B).
Any operation	Class G (from 10,000 ft but not above FL290)	An approved EC device configuration Note: An EC device may be operated concurrently with a Mode A/C or a Mode S transponder (other than one that is transmitting ADS-B).

Exceptions to (E)TSO or NAA requirements (MOS 26.19)

You are exempt from the (E)TSO or NAA integrated TABS device requirements if the aircraft has equivalent equipment with a statement of conformance from the manufacturer stating:

- › the surveillance equipment carried provides you, other aircraft and air traffic services (ATS) with equivalent surveillance capability as if it complied with the TSO or ETSO
- › if the surveillance equipment carried provides you, other aircraft and ATS with the same capability as if it had been authorised by the NAA as per subsection 26.28(4).

A Mode S transponder must transmit each of the following when on the ground or in flight:

- › assigned aircraft address
- › Mode A code
- › Mode C code
- › aircraft flight identification (optional for an aircraft first issued with a certificate of airworthiness before 9 February 2012).

If an approved Mode S transponder transmits any Mode S EHS DAPs, the transmitted DAPs must comply with the standards set out in paragraph 3.1.2.10.5.2.3 and Table 3-10 of Volume IV, 'Surveillance and Collision Avoidance Systems', of ICAO Annex 10.

Mode S transponders, ADS-B OUT and electronic conspicuity equipment – specific requirements (MOS 26.24)

When configuring a Mode S transponder, ADS-B OUT equipment, integrated TABS device or an EC device the following must be entered:

- › the assigned aircraft address
- › as far as practicable, one of the following:
 - » the aircraft identification on the flight notification
 - » the aircraft registration mark or other approved identifier if no flight notification was given.

An aircraft must not fly in Australian territory if it is fitted with ADS-B OUT equipment that is not an approved ADS-B OUT equipment configuration, approved ED device, approved integrated TABS device, or approved Mode C transponder with Class B TABS position source device configuration unless the equipment is:

- › deactivated
- › set to transmit only a value of zero for the NUCp, NACp, NIC or SIL as this is considered equivalent to deactivation.

Exception: *The previous paragraph does not apply to an aircraft if it is undertaking an ADS-B test flight in airspace below FL290 in VMC.*

Alternate GNSS position source for ADS-B OUT – requirements (MOS 26.25)

For an aircraft first issued with a certificate of airworthiness on or after 8 December 2016, an alternate GNSS position source is acceptable if:

- › the source is certified by the NAA of a recognised country for use in instrument flight rules (IFR) flight
- › its specification and operation include:
 - » GNSS fault detection and exclusion (FDE), computed in accordance with the definition at paragraph 1.7.3 of RTCA/DO- 229D
 - » the output function HPL is computed in accordance with the definition at paragraph 1.7.2 of RTCA/DO-229D
 - » functionality, for the purpose of HPL computation, accounts for the absence of the SA of the GNSS in accordance with paragraph 1.8.1.1 of RTCA/DO-229D.

For an aircraft first issued with an airworthiness certificate before 8 December 2016, an alternate GNSS position source is acceptable if:

- › the source is certified by the NAA of a recognised country for use in IFR flight

› its specification and operation include:

- » GNSS fault detection and exclusion (FDE), computed in accordance with the definition at paragraph 1.7.3 of RTCA/DO- 229D
- » the output function HPL is computed in accordance with the definition at paragraph 1.7.2 of RTCA/DO-229D.

Alternate ADS-B OUT equipment configuration – requirements (MOS26.26)

Alternate ADS-B OUT equipment configuration is acceptable if:

- › it is approved or accepted by an NAA of a recognised country as meeting the standards of EASA AMC 20-24 or EASA CS-ACNS or the FAA 14 CFR 91.225 for 1090 MHz extended squitter ADS-B
- › the AFM or flight manual supplement attests to the certification
- › the GNSS system meets the performance requirements mentioned in MOS 26.25 for an aircraft manufactured on or after 8 December 2016.



Approved Mode S transponder with Class B TABS position source device equipment configuration – requirements (MOS 26.27)

A Mode S transponder with Class B TABS configuration must be:

- › authorised in accordance with (E)TSO-C166B
- › approved under Part 21 of CASR to have an equivalent level of performance.

The transponder must transmit NACp, NIC, SIL and SDA values in accordance with the authorised capability of the GNSS position source.

The geographical position transmitted by the Mode S transponder must be determined by either:

- › a Class B TABS position source device authorised in accordance with (E)TSO-C199
- › another equivalent source approved under Part 21 of CASR.

If a Mode S transponder with Class B TABS position source device transmits a SIL value of less than 2, the aircraft must not enter controlled airspace if, in such airspace, the aircraft must carry equipment that is of an approved ADS-B OUT equipment configuration.

Approved integrated TABS device – requirements (MOS 26.28)

An approved integrated TABS device may only be operated in transmitting mode:

- › below FL290
- › in Class D, E or G airspace
- › if the device is authorised by the NAA of the equipment manufacturer and:
 - » the device meets the technical specifications in (E)TSO-C199 for a device with integrated Class A TABS and Class B TABS functionality
 - » the device transmits a SIL value of 1.

Note: Also refer to section 26.19 of the MOS (see earlier in this section), which is an exception to the NAA authorisation requirement above.

Approved EC device – requirements (MOS 26.29)

An EC device:

- › may only be operated in transmitting mode below FL290
- › must not transmit at the same time as a Mode S transponder that is also transmitting ADS-B
- › must use a Class B TABS position source that complies with the performance standards in (E)TSO-C199
- › must meet the technical specifications in UK CAP 1391 as long as:
 - » the EC device uses a Class B TABS position source that complies with the performance standards specified in (E)TSO-C199
 - » the device can transmit a SIL value of 1, and meets the requirements described in paragraph 2.2.3.2.7.2.4.6 of RTCA/DO-26B
- › must use a barometric encoder for altitude information
- › must be mounted in accordance with the manufacturer's instructions and must not:
 - » interfere with aircraft controls
 - » otherwise affect the safe operation of the aircraft
- › must have a declaration of capability and conformance, or declaration from the EC device manufacturer, certifying that the device meets the following requirements:
 - » if the declaration was made before 2 December 2021 – clauses 1 to 5 of Part B of Appendix XIV of CAO 20.18 (in force immediately before 2 December 2021) or
 - » conformance with UK CAP 1391 and
 - » a declaration that a barometric encoder is used for altitude information
- › must not be operated in a transmit mode anywhere in Australia unless it is listed on the CASA website as an EC device model for which the manufacturer has made a valid declaration.

Note: An EC device may be operated concurrently with a Mode A/C or a Mode S transponder (other than one that is transmitting ADS-B), but it is not a substitute for mandatory carriage of a transponder in relevant airspace.

For aircraft using such an EC device, a copy of the declaration must be carried in flight.

The manufacturer of an EC device model may apply in writing to CASA:

- › for a statement that CASA considers that the manufacturer has made a valid declaration of capability and conformance
- › for the EC device model to be included on the CASA website.

CASA may remove an EC device model from the CASA website if:

- › the manufacturer requests its removal in writing
- › CASA deems it necessary in the interests of aviation safety.

Aircraft flown with inoperative surveillance equipment (MOS 26.30)

Surveillance equipment may only be inoperative at the beginning of a flight if:

- › the flight begins from a place at which there is no facility for the surveillance equipment to be repaired or replaced
- › the flight ends not more than 72 hours after the time the surveillance equipment was found to be inoperative
- › ATC is informed about the unserviceability.

Note: See also MOS 26.04 for requirements for flight with inoperative equipment relating to air traffic control clearances.

Operating aircraft with inoperative equipment — placarding (91.150)

An inoperative placard must be applied to any fitted or carried inoperative item of equipment that is accessible during flight.



Where an item of equipment is inoperative it is both the operator's and the pilot in command's responsibility to ensure that it is safe to operate the aircraft.

4.4 Operational control

The pilot in command's (PIC's) responsibility for a hot air flight begins at the start of hot inflation and ends when the balloon or airship is secured on the ground after final landing. During this time, the PIC has the final authority over the aircraft operation and matters pertaining to the discipline of persons on board. Additionally, the PIC is responsible for:

- › the safety of persons and cargo
- › the safe operation of the aircraft, during a flight.



This identifies the period a PIC's authority begins and ends. However, they will have to take responsibility during the set up for launch and post-flight pack up to ensure the safety of the flight and aircraft. The PIC may delegate certain tasks to others (such as ground crew members).

Note: The above information on the authority and responsibilities of PIC has been adapted from 91.215 to be applicable to balloon and hot air airships.

Actions and directions by operator or PIC (91.220)

If necessary for the safety of the aircraft, the operator or the PIC may:

- › direct a person to either:
 - » do, not do, or limit the doing of something while the person is on the aircraft
 - » leave the aircraft before the flight begins
- › with assistance, if required, and by use of reasonable and necessary force:
 - » remove a person or a thing from the aircraft before the flight begins
 - » restrain a person for the duration of the flight or part of the flight
 - » seize a thing on the aircraft for the flight or part of the flight
 - » place a person on the aircraft in custody
 - » detain a person or a thing until the person or thing can be released into the control of an appropriate authority.

A person directed by the operator or a pilot must comply with the direction given.



Image | Jay Schesser

Crew members — power of arrest (91.225)

The pilot, or a crew member authorised by the pilot, may, without a warrant, arrest a person on the aircraft to ensure the safety of the aircraft, its passengers, crew, or cargo.

The pilot or the crew member must believe that the person is committing, attempting to commit, be about to commit, has committed or has attempted to commit an offence against the Act or the regulations.

The pilot must ensure that, as soon as practicable after the flight ends, the arrested person is delivered into the custody of the police. If the flight ends overseas, the pilot must deliver the person to that country's law enforcement agency.



The pilot or other crew member, must not, in the course of arresting another person for an offence, use more force, or subject the other person to greater indignity, than is necessary and is reasonable to make the arrest or to prevent the escape of the other person after the arrest (section 3ZC of the Crimes Act 1914). Unless it is not possible or practical, or if the person is already aware of the circumstances surrounding their arrest, the pilot or other crew member should inform the person about the specific offence for which they are being arrested (section 3ZD of the Crimes Act 1914).

4.5 Flight preparation

Flight preparation requirements (131.340 and MOS 12.02)

An AOC holder's exposition must include procedures that comply with the flight preparation (weather assessment) requirements prescribed in the MOS. These procedures must be complied with by all crew.

The PIC of a flight must read authorised weather forecasts and reports encompassing the planned flight period plus two hours after the planned landing time. They must note any expected changes to surface conditions and forecast winds that may affect the landing(s).

The PIC must reference any reasonably available and relevant weather information.

The authorised weather information (if any) for any aerodrome within 10 NM of the planned flight must be obtained for a flight in controlled airspace.

If the required weather information is studied more than two hours before the flight, updated weather information must be obtained and reviewed before the flight begins.

If a required forecast cannot be obtained in the hour before take-off, the flight may depart if the PIC is satisfied that the departure point weather will permit the planned flight to be conducted safely.



An authorised weather forecast is made by the Bureau of Meteorology for aviation purposes.

Balloon flight notification requirements

(131.345 and MOS 13.02, 13.03 and 13.04)

The PIC must ensure flight notification is provided as prescribed in the MOS.

If the flight is in Class C or Class D airspace, a flight plan is to be submitted or a SARTIME for arrival nominated.

The PIC must either submit a flight plan, nominate a SARTIME for arrival, or leave a flight note with a responsible person for a flight that is:

- › a balloon transport operation
- › over water where, in an emergency, a landing in water or ditching may occur

- › in a designated remote area
- › conducted in whole, or in part, at night.

Note: (MOS 131 Chapter 13.05) A responsible person for the receipt of a flight note must:

- › be over the age of 18 years
- › have access to at least two operative and appropriate means of communicating with a search and rescue service e.g. two telephones or a telephone and a radio transmitter
- › be able to satisfy the PIC that they know how to contact the Joint Rescue Coordination Centre Australia and will immediately do so if the flight is overdue.

The PIC must ensure that air traffic services (ATS) is notified before the flight begins if there are changes to:

- › the aircraft callsign or registration
- › the serviceability of the equipment that is stated to be on board on the flight plan
- › the planned departure time if changed by more than 30 minutes
- › the planned maximum altitude.

If a flight plan has been submitted, ATS must also be notified of any changes to:

- › route and landing areas
- › number of persons on board.

If a SARTIME has been submitted, ATS must also be notified of any changes to:

- › aircraft callsign or registration
- › estimated time of departure if changed by more than 30 minutes
- › route and landing points
- › SARTIME.

The PIC must ensure that the SARTIME is cancelled no later than the time nominated.



When cancelling a SARTIME, the information must include the aircraft callsign and place of arrival. ATS will acknowledge the 'CANCEL SARTIME' report with a readback of the place of arrival, if appropriate, and the words 'SARTIME CANCELLED'.

Matters to be checked before take-off (131.350 and MOS 14.02, 14.03 and 14.04)

The PIC must check the head office, flight information region (FIR) and location-specific NOTAMS (notices to airmen) relevant to the flight.

The PIC must ensure that pre-flight checks are completed. These checks must confirm that:

- › all required equipment is available and functioning properly
- › emergency and survival equipment is readily accessible
- › each crew member is fit to perform their duties
- › for an Australian aircraft:
 - » there is a certificate of release to service for the most recent maintenance carried out
 - » no defects have been recorded that would affect the aircraft's airworthiness
- › the flight controls are tested and functioning correctly
- › each system for measuring and displaying pressure altitude, is checked for accuracy
- › if carriage of supplemental oxygen is required:
 - » the required amount is carried
 - » the approved oxygen delivery system is functioning properly

- » quick-donning masks are available if required
- » adjustable masks fit each flight crew member, and any other required person.

Before take-off, if the site elevation is known and an accurate QNH is available, the PIC must test the accuracy of each pressure altitude system.

An altimeter used for a VFR flight with an accurate QNH is only operative if it reads site elevation to within either:

- › 100 ft
- › 110 ft at test sites above 3,300 ft.

QNH is only accurate if provided by:

- › automatic aerodrome information service
- › air traffic control (ATC)
- › aerodrome automatic terminal information service (ATIS)
- › automatic weather information service (AWIS)
- › certified air/ground radio service
- › weather and terminal information reciter (WATIR).

QNH from an authorised weather forecast must not be used for checking the accuracy of a pressure altimeter.

Site elevation must be derived from aerodrome survey data that is authorised in writing by CASA (or an NAA, or supplied in writing by the relevant aerodrome operator).

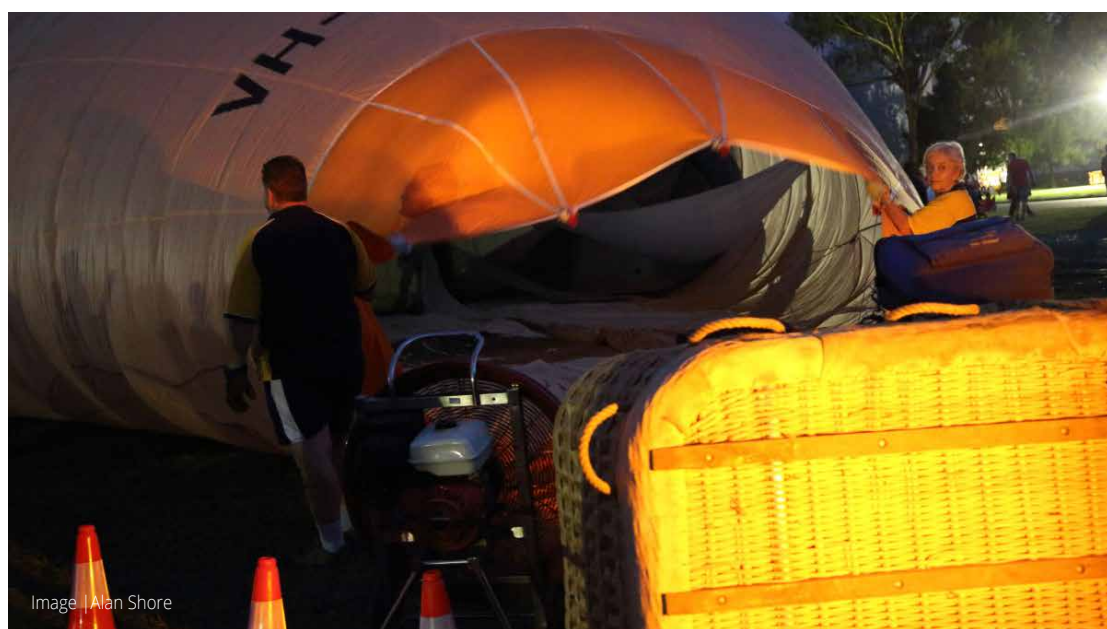


Image | Alan Shore

Crew members to be fit for duty (91.520)

A crew member must not perform, and the operator must not assign them to, a required duty if they are, or are likely to be, unfit.

A crew member is, or is likely to be, unfit to perform a duty if the crew member is:

- › fatigued to the extent they cannot safely perform their duties
- › under the influence of a psychoactive substance to the extent that their ability to safely perform the duty is reduced, or likely to be reduced.

A crew member must not commence their duty if:

- › they have consumed alcohol within 8 hours of when the flight begins
- › if an alcohol test taken at the time would reveal that they had exceeded the permitted level of alcohol (within the meaning of Part 99).



Image | Alan Shore

A crew member must not consume alcohol while on board the aircraft.



The commonly used 'I'M SAFE' mnemonic addresses the most common factors that can cause pilot impairment and is detailed below.

Figure 6: I'M SAFE



Determining fitness to fly requires sound and honest judgement. Illness, medication, illicit drugs, alcohol, stress, fatigue, lack of food and dehydration may affect a person's ability to operate safely (refer to CASA's CAO 48.1 Fatigue management plain English guide).



The permitted level of alcohol is less than 0.02 grams of alcohol in 210 litres of breath. Certain aviation organisations are required to implement drug and alcohol management plans that apply to all employees performing, or who are available to perform, safety sensitive aviation activities. CASA may conduct random tests for alcohol and other drugs in anyone performing a safety sensitive aviation activity, whether for an organisation or in a private capacity.

4.6 Search and rescue (emergency and survival equip)

Information about search and rescue services (131.290)

An AOC holder must ensure information about the search and rescue services relevant to the flight is readily accessible to the flight crew before the flight begins.

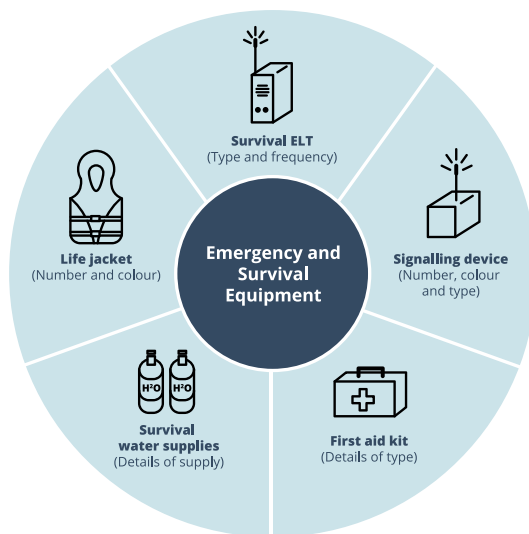


Search and rescue service contact radio frequencies and telephone numbers can be found in AIP and the En-Route Supplement Australia (ERSA) available as part of the AIP.

Information about emergency and survival equipment (131.295 and MOS 7.01)

From the beginning of the flight, the AOC holder must ensure aircraft emergency and communication equipment details are available for immediate communication to a rescue coordination centre when required.

Figure 7: Emergency and survival equipment



4.7 Fuel requirements

Fuel and ballast procedures (131.380)

The AOC holder's exposition must include procedures to ensure that all flights are conducted in accordance with the fuel and ballast requirements of 131.385. (See below in this section.)

Fuel and ballast requirements (131.385)

The operator and the PIC must comply with the minimum requirements set out in the MOS regarding fuel and ballast.

An AOC holder must include in their exposition:

- › matters to be considered when determining the amount of fuel or ballast to complete a flight safely
- › the amount of fuel or ballast that must be carried
- › the procedures for monitoring amount of fuel or ballast
- › the procedures to be followed if fuel or ballast reaches specified amount.



Fuel, in the form of liquid petroleum gas, is used in hot air balloons, hot air airships and mixed balloons to control altitude by heating the air inside the envelope. Ballast (as defined in subsection 1.06 (5)) is used in a gas balloon and mixed balloon to control altitude by initiating ascent and controlling descent through the progressive release of the ballast. A gas balloon flight must terminate when the ballast is exhausted.

General requirements (MOS 21.03)

Before flying a gas or mixed balloon, the PIC must ensure sufficient ballast and fuel is carried to comply with the fuel requirements in 21.04 of the MOS below.

Fuel consumption data

Fuel consumption data (usable fuel) for a hot air balloon or hot air airship must be obtained from either:

- › the most recent aircraft specific fuel consumption data derived from the fuel consumption monitoring system (if available)
- › the aircraft manufacturer's data for the aircraft.

Considerations for usable fuel calculations

To determine the amount of usable fuel needed for a flight, the PIC must consider:

- › the total loaded weight of the aircraft at take-off
- › NOTAMs
- › authorised weather forecasts and reports
- › air traffic service procedures, restrictions, and possible delays
- › the terrain to be flown over and the suitable landing areas
- › the planned duration of the flight
- › the potential for deviations because of unforeseen factors.



Unforeseen factors are factors that could have an influence on an aircraft's fuel consumption to a suitable landing area, including:

- › the aircraft's deviation from the expected fuel consumption data for the aircraft
- › extended deviations from planned routings or altitudes.

Amount of fuel that must be carried for a flight (MOS 21.04)

The PIC is responsible to ensure that the aircraft is carrying at least the following amount of usable fuel prior to each flight:

- › trip fuel plus
- › night operations fuel (if applicable) plus
- › for a balloon transport operation, a final reserve fuel of 20 minutes.

Regardless, flights must only depart with either:

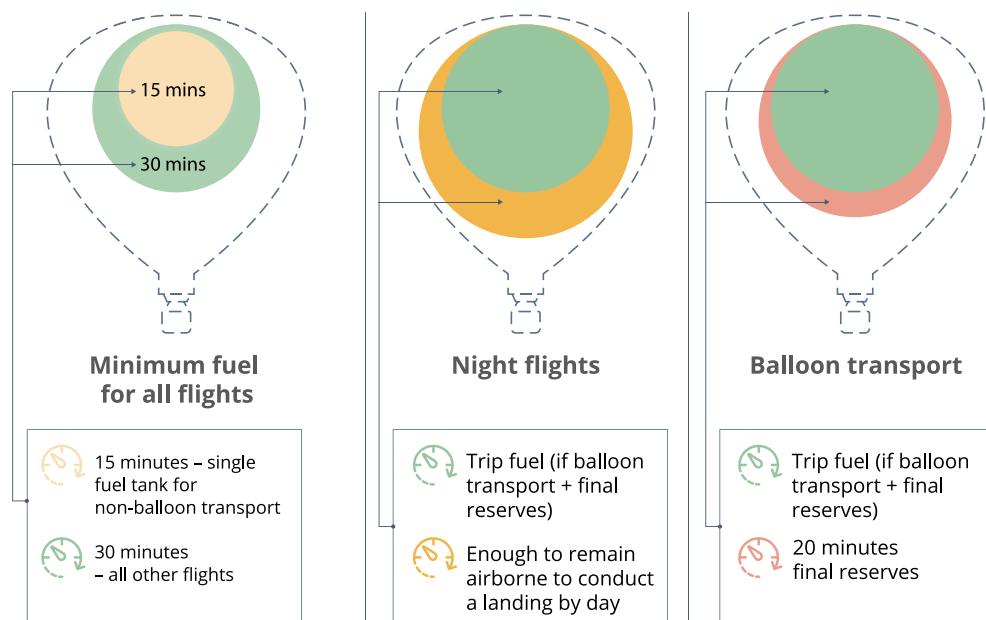
- › at least 30 minutes of flight time
- › if the hot air balloon is equipped with a single fuel tank and not undertaking a balloon transport operation, at least 15 minutes of flight time.

During flight, the PIC must monitor the fuel usage to ensure there is sufficient fuel:

- › to complete the planned trip
- › to complete night operations (if applicable)
- › for a balloon transport operation, a final reserve fuel of 20 minutes.

If unintended fuel usage occurs, the PIC must ensure fuel-requirement compliance by recalculating the fuel usage for the remainder of the flight.

Figure 8: Fuel required for flight



Procedures for determining fuel before flight and fuel monitoring during a flight (MOS 21.05)

The PIC is responsible for determining the fuel required for flight prior to take-off, and to regularly monitor on-board fuel, to ensure:

- › there is enough to complete the planned trip with any reserve intact (if required)
- › actual fuel consumption is as planned
- › how much fuel is expected to be on board upon landing.

Procedures if fuel reaches specified amounts (MOS 21.06)

Upon determining the remaining usable fuel is less than that required to reach the planned landing area, the PIC must, if possible, make a precautionary landing at another suitable landing area to ensure any required reserve is maintained.

Operational variations – procedures and requirements (MOS 21.07)

Operational variations to the calculation of trip fuel or night operations fuel must be documented in an AOC holder's exposition.

At least 28 days before using an operational variation, the AOC holder must submit to CASA evidence of how the variation maintains or improves aviation safety along with:

- › documented in-service experience
- › the results of a specific safety risk assessment including:
 - » flight fuel calculations
 - » capabilities including:
 - a data-driven method that includes a fuel consumption monitoring program
 - the use of techniques for determining the suitability of alternate landing areas
 - specific risk mitigating measures
 - the quality and reliability of meteorological information
- › a copy of the procedures for the proposed operational variation.

CASA may disapprove the variation if it determines there is insufficient evidence warranting a demonstrated aviation safety improvement. In this case CASA may direct the AOC holder to remove or revise the variation.

Contaminated, degraded or inappropriate fuels (91.465)

The operator and the PIC must ensure that an aircraft has not been fuelled with contaminated, degraded or inappropriate fuel.

Fire hazards (91.470)

No person shall create a fire hazard, or allow a fire hazard to exist, within 15 m of the aircraft or equipment used to fuel the aircraft whilst the aircraft is being fuelled.



All reasonable precautions against fire hazards should be taken. All equipment should be of sound design and be maintained in safe working condition.



Any gas leaks should be reported to the appropriate authority.

Fuelling aircraft – firefighting equipment (91.475)

A person who fuels the aircraft must ensure at least one fire extinguisher:

- › is readily available and positioned between 6 m and 15 m from the fuelling point
- › is of a type and capacity suitable for extinguishing fuel and electrical fire.

For all fuelling operations in Australia, available portable fire extinguishers must comply with Australian/New Zealand Standard AS/NZS 1841.

Equipment or electronic devices operating near aircraft (91.485)

No person shall operate equipment or an electronic device within 15 m of a critical fuelling point of the aircraft during refuelling. A person must not fuel an aircraft if equipment or an electronic device is being operated within the same area.



Operators of Part 131 aircraft should also consider the situation when fuel tanks are fuelled away from the aircraft.

A critical fuelling point for a Part 131 aircraft fuel tank would be:

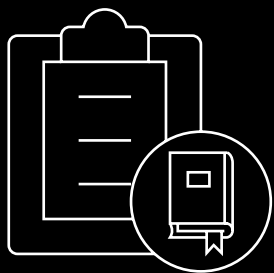
- › a fuel tank filling point
- › a fuel tank vent outlet
- › the ground fuelling equipment used to refill the fuel tanks.

Exception: *The above requirements do not apply if the equipment or electronic device:*

- › *is part of the fuelling equipment*
- › *is designed for use during fuelling operations*
- › *complies with an industry standard about the safe use of equipment or electronic devices within 15 m of a critical fuelling point.*

Exception: *An operating electronic device, hazardous to the process of fuelling only because it is designed to produce radio emissions (within the meaning of the Radiocommunications Act 1992), may be used but must be at least 6 m from each critical fuelling point when fuelling the aircraft.*





CHAPTER 5

FLIGHT RULES (IN THE AIR AND ON THE GROUND)

Chapter 5 – Flight rules (in the air and on the ground)

Flight rules are the regulations and procedures for flying aircraft in various conditions and locations i.e. in the air and on the ground.

This chapter is designed to explain the rules that will assist the PIC and their crew prepare, plan and safely fly an aircraft in a variety of circumstances.

Included in this chapter are:

- › general flight rules including specific right of way requirements for balloons and hot air airships
- › VFR flights and VMC criteria requirements
- › flights over populous areas
- › dropping of things from an aircraft
- › night flying
- › air traffic services (ATS) and operations in various airspace types
- › use of radio and communication
- › operations on the ground
- › flights over water
- › smoking
- › carriage of passengers
- › carriage of animals and cargo
- › performance – aircraft loading
- › hang glider procedures
- › firearms
- › portable electronic devices (PEDs)
- › psychoactive substances
- › miscellaneous rules including test flights, air displays and reporting emergencies.

5.1 General flight rules (rules of the air/water)

Aircraft not to be operated in manner that creates a hazard (91.055)

The PIC must not operate the aircraft in a manner that creates a hazard to another aircraft, persons or property.



'Not creating a hazard' begins with complying with the regulations. However, simply complying with regulations might not necessarily prevent a hazard being created, especially if the pilot and/or crew are not fully qualified, competent and current.



To avoid operating an aircraft in a manner that creates a hazard it is acceptable when making radio broadcasts and reports to:

- › use standard words and phrases for radio communications
- › if using standard phraseology is not possible, using words and phrases that directly communicate the relevant information, accompanied by some form of confirmation that the message was received by the intended recipient.

Basic rule (91.325)

The PIC must maintain vigilance, so far as weather conditions permit, to see and avoid other aircraft.



Refer to AC 91-14 Pilots' responsibility for collision avoidance for guidance on the pilots' responsibility for collision avoidance.

Right of way rules (91.330)

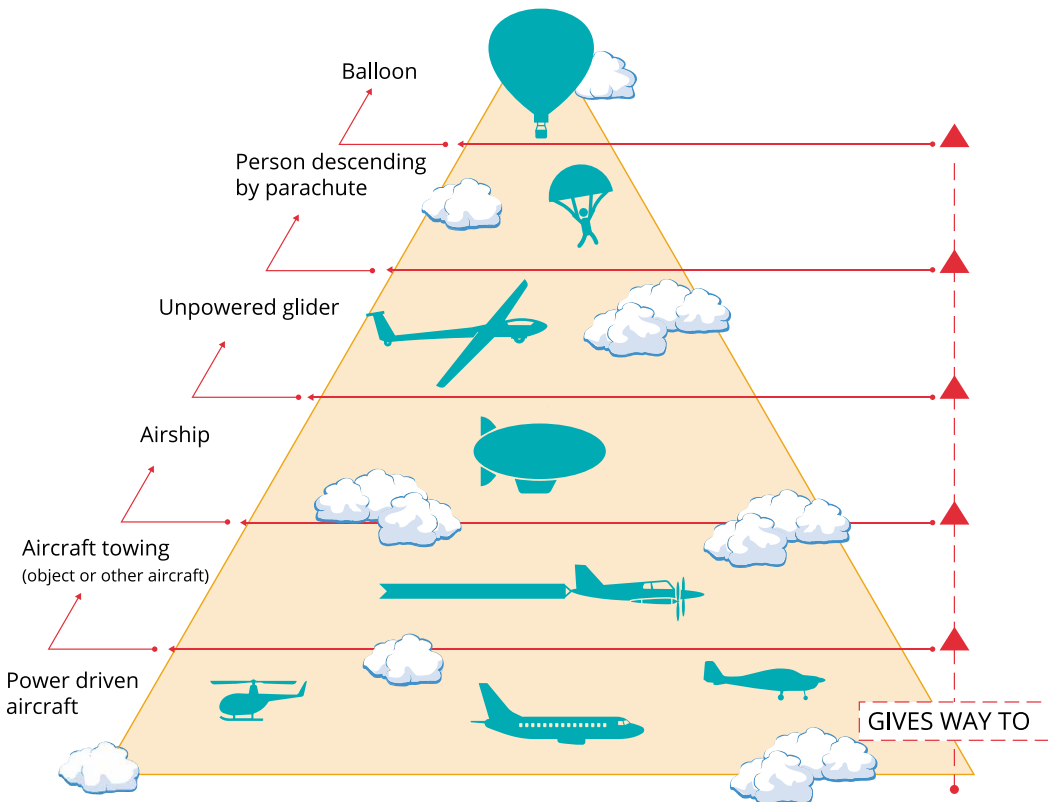
The PIC must follow the right-of-way rules shown in the following table when taking action to avoid a collision with another aircraft.

Table 9: Right of way rules

Circumstance	Right of way rule
An aircraft is in an emergency and compelled to land	All aircraft must give way to the aircraft compelled to land.
An aircraft is landing	Any other aircraft (whether in flight or operating on the ground or water) must give way to the landing aircraft.
Two heavier-than-air aircraft are on approach to land at an aerodrome	The higher aircraft must give way to the lower aircraft however, if the higher aircraft is in the final stages of an approach to land, the lower aircraft must not take advantage and cut in front of the higher aircraft and a power-driven heavier-than-air aircraft must give way to an unpowered glider.
An aircraft is overtaking another aircraft	The aircraft that is overtaking must give way to the aircraft being overtaken.
Two aircraft are on converging headings at approximately the same altitude	The aircraft that has the other aircraft on its right must give way to the other aircraft.

Note: An aircraft mentioned in the following diagram must give way to an aircraft above it in the diagram.

Figure 9: Right of way rules



Exception: Although the right-of-way rules apply, the PIC may take whatever action is necessary to avoid a collision.

Right of way rules for take-off and landing (91.340)

The PIC must not fly an aircraft in a way that creates a risk of collision with another aircraft, person, vessel, vehicle or structure during take-off or landing.

Additional right of way rules (131.355)

The PIC must give way to another Part 131 aircraft at a lower altitude unless the other aircraft is a hot air airship.

5.2 VFR flights

The diagram below depicts the various airspaces that are described in this section.

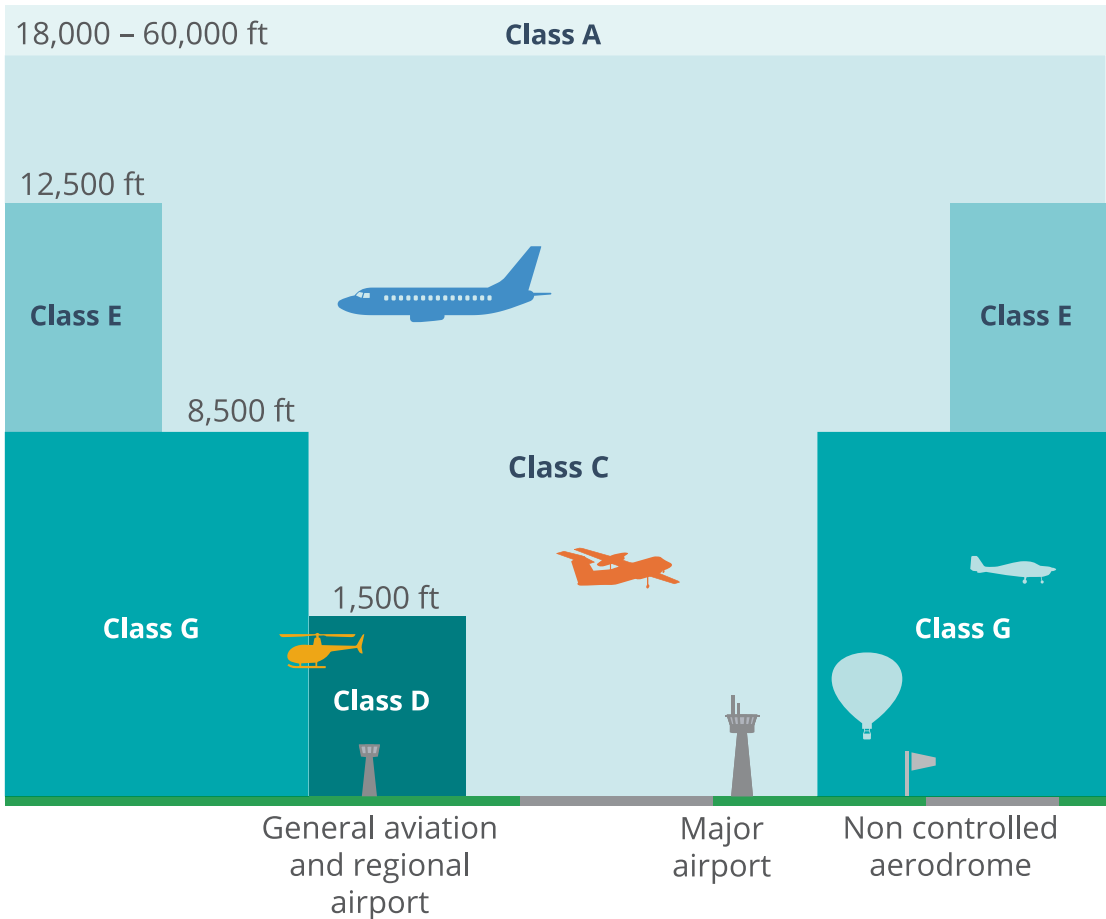
Aircraft to be flown under VFR or IFR (91.270)

The PIC must operate a Part 131 aircraft only under the VFR.

VFR flights (131.367 and MOS 19.02)

The PIC must operate the aircraft in accordance with the VMC criteria for the airspace unless an air traffic control (ATC) clearance is given to conduct the flight under the special VFR.

Figure 10: Airspaces classes



The PIC must, when navigating by visual reference to ground or water, fix the aircraft position at least every 30 minutes by noting features marked on topographical maps or charts.

For balloon transport operations, when conducting a night VFR flight, the PIC must take off no earlier than one hour before first light and plan to land after first light (unless there is an emergency). A non-transport operation has

no restrictions on take-off time, but must plan to land by day, except in an emergency or as a precautionary measure.

VMC criteria (MOS 2.02)

VMC criteria means the meteorological conditions expressed in terms of flight visibility and the horizontal and vertical distance from cloud. The PIC must maintain the VMC criteria set out in the following tables and figures.

Figure 11: VMC criteria for balloons in Class A, B, C, or E or G airspace

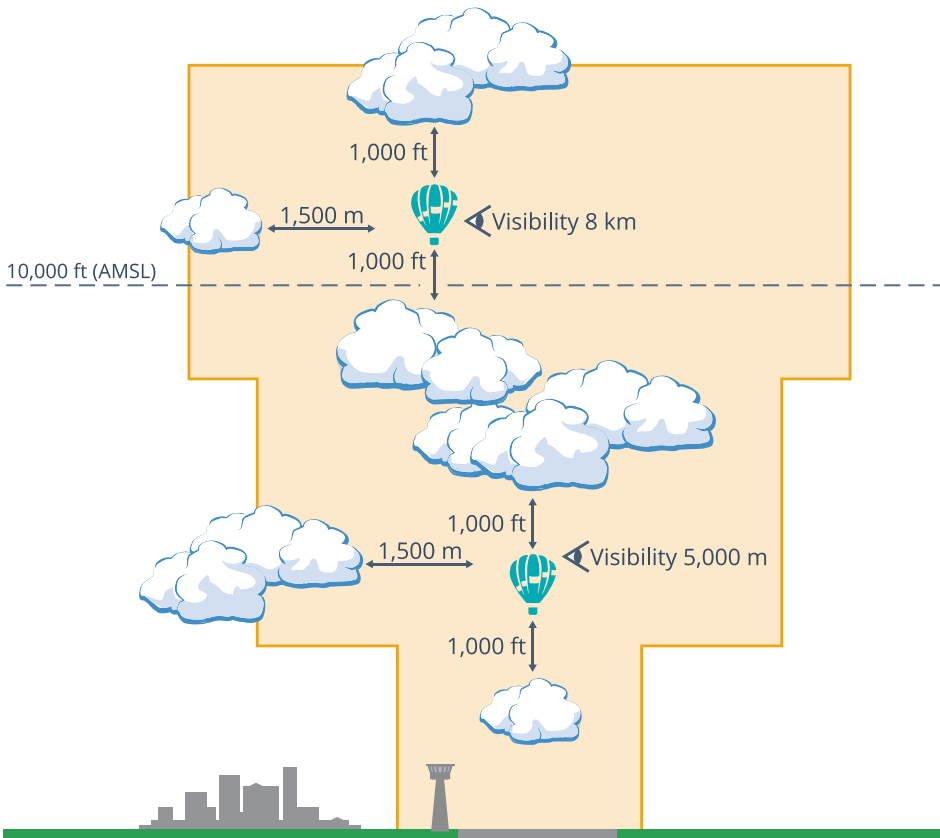


Table 10: VMC criteria for balloons in Class A, B, C, or E or G airspace

Height	Flight visibility	Distance from cloud	Operational requirements
At or above 10,000 ft AMSL	8,000 m	1,500 m horizontal 1,000 ft vertical	
Below 10,000 ft AMSL	5,000 m	1,500 m horizontal 1,000 ft vertical	ATC may permit operations in weather conditions that do not meet these criteria (special VFR).

Figure 12: VMC criteria for balloons in Class D controlled airspace

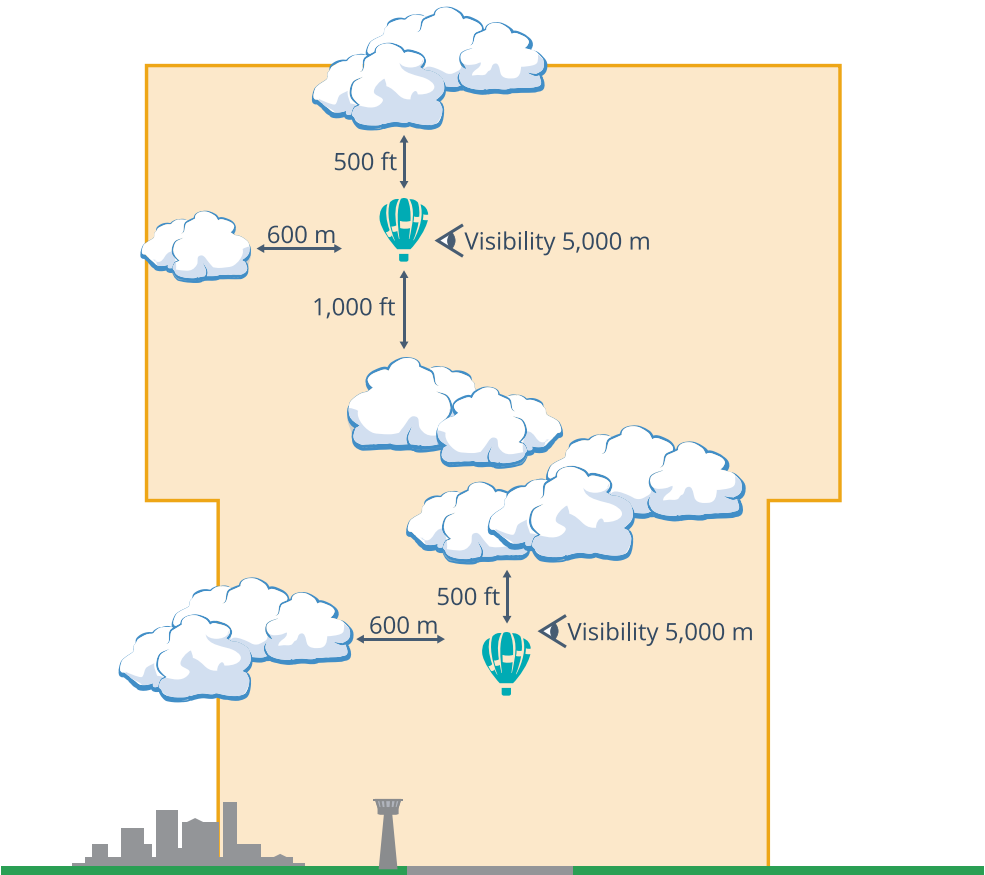


Table 11: VMC criteria for balloons in Class D controlled airspace

Height	Flight visibility	Distance from cloud	Operational requirements
All heights	5,000 m	600 m horizontal 1,000 ft vertically above cloud 500 ft vertically below cloud	ATC may permit operations in weather conditions that do not meet these criteria (special VFR).

Figure 13: VMC criteria for balloons in Class G airspace

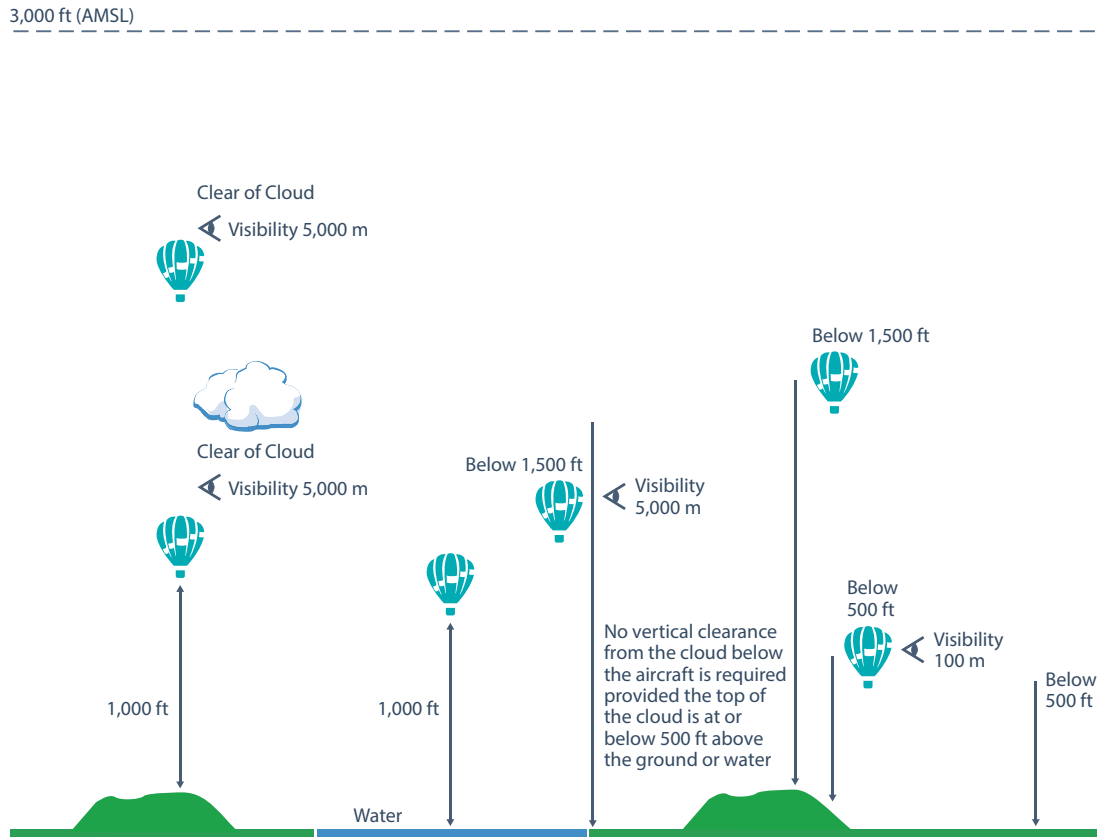
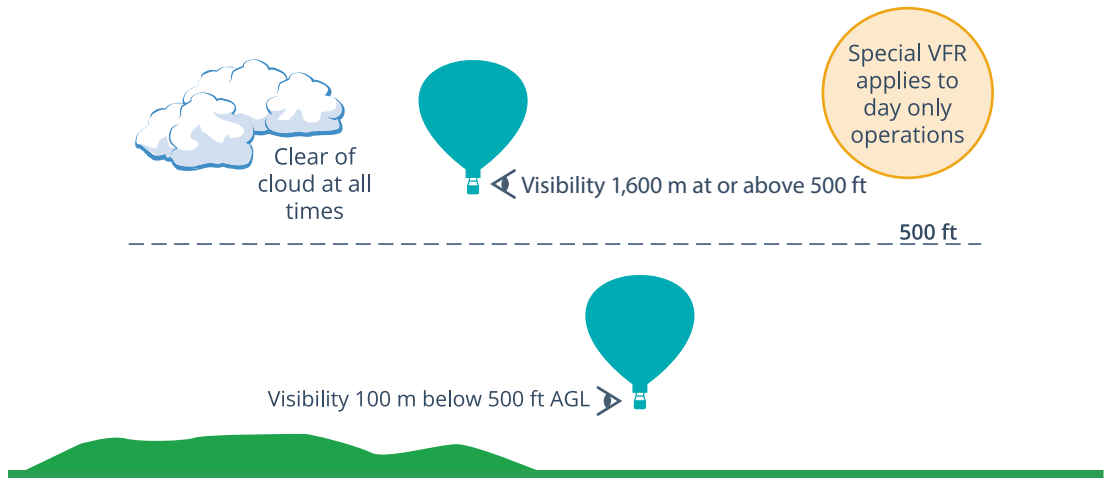


Table 12: VMC criteria for balloons in Class G airspace

Height	Flight visibility	Distance from cloud	Operational requirements
At or below whichever is the higher of 3,000 ft AMSL or 1,000 ft AGL	5,000 m	Clear of cloud	In sight of ground or water.
Below 1,500 ft above ground or water	5,000 m	No vertical clearance from the cloud below the aircraft is required provided the top of the cloud is at or below 500 ft above ground or water.	The aircraft must be at least 10 NM from an aerodrome with an approved instrument approach procedure. The aircraft must be equipped with VHF radio.
Below 500 ft above ground or water	100 m	Not applicable	Day operation only provided the aircraft is at least 10 NM from an aerodrome with an approved instrument approach procedure. The aircraft must be equipped with VHF radio.

Figure 14: Special VFR

Special VFR (MOS 2.01)

ATC may issue the PIC of a 'special VFR clearance' that allows flight below the VMC criteria provided the flight is:

- › conducted only by day
- › clear of cloud
- › able to maintain a visibility of at least:
 - » 1,600 m for a height at or above 500 ft AGL
 - » 100 m for below 500 ft AGL.

5.3 Flights over populous areas etc

(131.305 and MOS 8.02)

When flying over a populous area or public gathering, the PIC must operate the aircraft at least 1,000 ft above the highest feature or obstacle on the ground or water, within 100 m of the aircraft's position, unless:

- › taking off
- › manoeuvring for a landing
- › as part of an air display and holding an approval to do otherwise (91.180)
- › determining the suitability of a landing area
- › navigating to a planned landing area.

5.4 Dropping of things from aircraft

(131.310 and MOS 9.02)

The PIC must ensure nothing is dropped from an aircraft if it is likely to endanger the safety of the aircraft, persons or property.

The following items may be dropped from an aircraft:

- › fine sand or water carried as ballast
- › competition markers and wind indicators
- › a parachutist in accordance with the requirements of Part 105.



When dropping one or more parachutists from a balloon, consideration must be given to the balloon's minimum loading weight. (See section 5.17 in this guide.)

Any substance or object that is to be dropped or released from an aircraft must:

- › be carried:
 - » inside the aircraft
 - » in a manner specified in the AFM or an engineering order issued under Part 21
 - » in a manner set out in the exposition or operations manual
- › not damage any part of the aircraft or affect the operation of the aircraft
- › be of a size to weight ratio that when released, the object immediately drops away from the aircraft.

5.5 Night flying

(131.315)

For a flight at night the PIC and the operator must hold:

- › a 131.035 approval to conduct a balloon transport operation or specialised balloon operation at night
- › an authorisation from a Part 131 approved self-administering organisation (ASAO) for all other night flights.

5.6 Air traffic services (ATS)

(131.353)

The PIC must operate an aircraft at a controlled aerodrome or in a control zone, control area or class of airspace, or in a prohibited, restricted or danger area, in accordance with the MOS requirements set out below.

Air traffic control clearances and instructions (91.257)

The PIC must comply with an ATC clearance or instruction.

Exception: *The PIC may deviate from the clearance without a new or amended clearance if it is necessary for the safety of the aircraft and/or its occupants. The PIC must advise ATC as soon as possible of the deviation.*



Image | Alan Shore

Transition altitude, transition layer and transition level (MOS 15.02)

Within any class of airspace within an Australian Flight Information Region (FIR):

- › the transition altitude is 10,000 ft
- › the transition level is set out in the following table.

Table 13: Transition levels in Australian FIRs

Area QNH	Transition level
Equal to, or greater than, 1013.2 hPa	FL110
At least 997 hPa but less than 1013.2 hPa	FL115
At least 980 hPa but less than 997 hPa	FL120
At least 963 hPa but less than 980 hPa	FL125
Less than 963 hPa	FL130

Note: The intention is to retain a minimum buffer of 1,000 ft above the transition altitude.

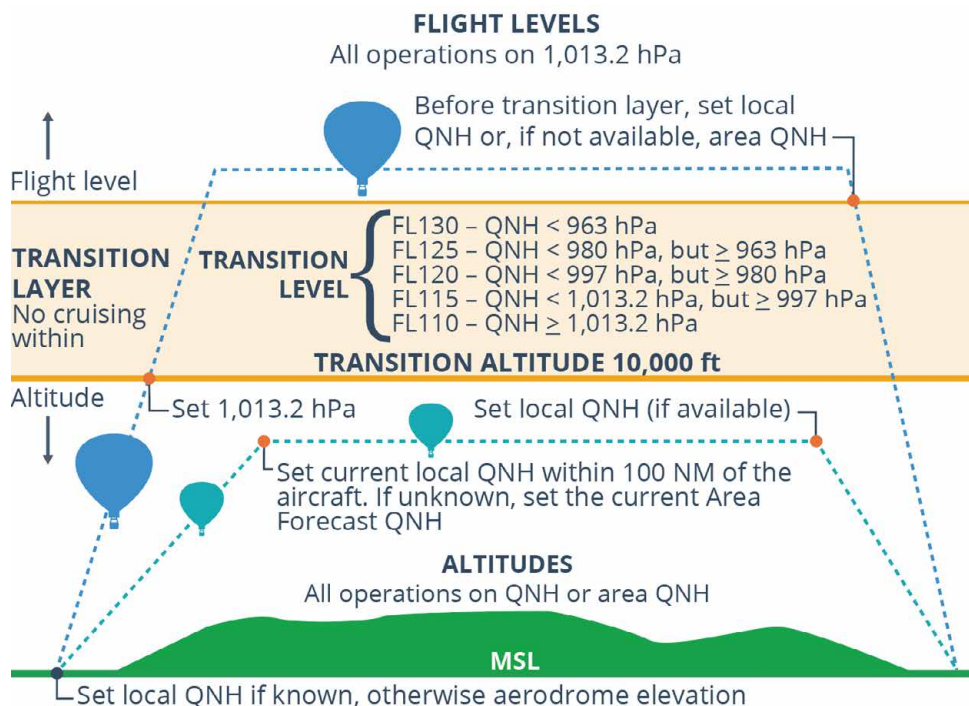
The PIC must not cruise or drift the aircraft within the transition layer.

For an operation at or below the transition altitude, the PIC must use the following altimeter setting:

- › the current local or forecast QNH of a station within 100 NM of the route
- › if the current local QNH is not known, the current area forecast QNH.

For an operation above the transition altitude, the PIC must use an altimeter setting of 1013.2 hPa. The PIC must change to and from 1013.2 hPa:

- › on climb, from QNH to 1013.2 hPa, after passing 10,000 ft and before levelling off
- › on descent, from 1013.2 hPa to the QNH, before entering the transition layer. (See figure 14 below in this section.)

Figure 15: Transition altitude, transition layer and transition levels

Inoperative radio requirements (MOS 15.03)

The following requirements apply to flights within any class of airspace within an Australian FIR other than an oceanic control area.

Note: The Designated Airspace Handbook (DAH) specifies the geographic boundaries of oceanic control areas.

If the radio fails during a flight, the PIC must:

- › if operating in Class E or G airspace:
 - » select code 7600 on the transponder (if fitted)
 - » remain outside controlled airspace
 - » broadcast position and intentions on the frequency appropriate to the area of operation as normal
 - » as soon as practicable, descend below 5,000 ft to continue flight
- › if operating in Class A, B, C or D airspace or in a restricted area:
 - » select code 7600 on the aircraft transponder (if fitted)
 - » broadcast position and intentions on the frequency prescribed in the authorised aeronautical information (AAI) as normal
 - » attempt to contact ATS by telephone
 - » commence descent in preparation for landing
 - » land as soon as practicable.

Mandatory broadcast area (MBA) (MOS 15.04)

The aircraft must be fitted with a radio for flights in a mandatory broadcast area (MBA), and the PIC must broadcast and listen while flying in that area.

The prescribed broadcasts and reports for flights in an MBA are set out in MOS Part 131 Chapter 16.06 and are:

- › if a Surveillance Flight Information Service (SFIS) is not active for the MBA, the requirements are listed in Table 14 below
 - › if an SFIS is active for the MBA, the requirements are specified in the AIP.
- Broadcasts or reports in an MBA must contain the following information, in this order:
- › aerodrome name followed by the word TRAFFIC
 - › aircraft type and callsign
 - › for an MBA where an SFIS is not active, immediately before entering the MBA:
 - » the aircraft's present altitude (where appropriate)
 - » the situation-based information required by the table below
 - › for an MBA where an SFIS is active, immediately before entering the MBA – the information required by the AIP for the SFIS
 - › the name of the relevant aerodrome.

Table 14: Broadcasts in relation to a mandatory broadcast area (MBA)

Situation	Broadcast
Prior to, or immediately after entering an MBA	Broadcast the intended use of the MBA
Entering the circuit area	Broadcast the situation, and indicate the position of the aircraft relative to the aerodrome
Commencing a missed approach	Broadcast the situation
After landing and clear of the active runway(s)	Broadcast the situation
Immediately before launching	Broadcast the situation, and one of the following pieces of information: <ul style="list-style-type: none"> › the planned destination for the flight › the direction intended to fly from the aerodrome › the nature of operation (e.g. circuits) › and the runway (if any) proposed to be used for take-off
Immediately before entering, or being moved onto, a runway to be used for launching	Broadcast that the aircraft is entering, or being moved onto, the runway and the runway identifier

Table 15: Mandatory broadcast area (MBA) requirements (MOS 15.04)

Broadcast area	Requirements
Ayers Rock MBA	Nil
Ballina/Byron Gateway MBA	When an SFIS is active for this MBA, operations in the MBA, or immediately before entering the MBA, must be conducted in accordance with the AIP
Port Hedland MBA	Nil

Controlled aerodromes (MOS 15.06)

The PIC must not operate at controlled aerodromes unless they hold either:

- › a current commercial pilot (balloon) licence
- › a current CAR certificate of validation
- › an authorisation issued by a relevant Part 131 ASAO to the operator to allow a Part 131 aircraft to operate within controlled airspace.

When operating at controlled aerodromes, the PIC must ensure:

- › the flight is conducted in accordance with the AAI
- › they receive an ATC clearance (if in operation) to take off and land
- › they maintain:
 - » a watch for any standard visual signals given by the ATC service
 - » a continuous listening watch for communications with ATS.

Control zones and areas – entry into Class A, B, C, or D or E airspace (MOS 15.07, 15.08 15.09)

An ATC clearance is required for entry to a control zone or a control area that is Class A, B, C or D airspace.

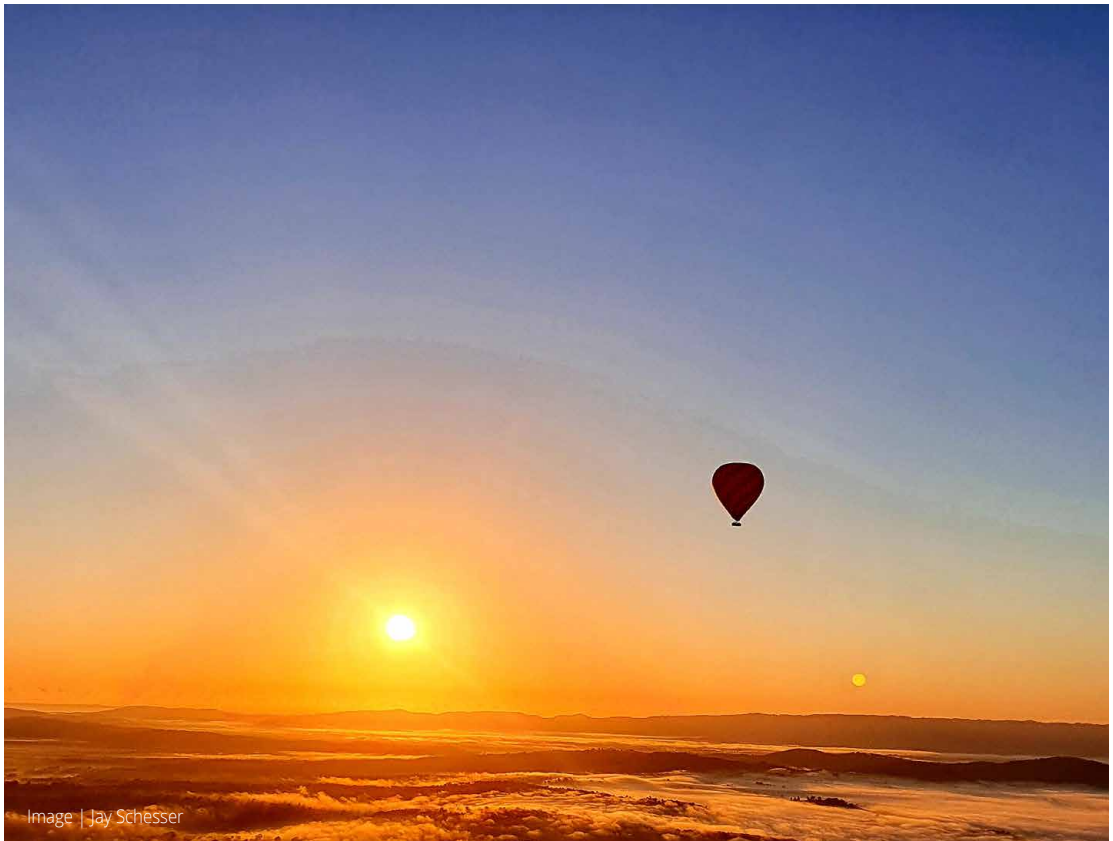
VFR flights do not require a clearance to enter Class E airspace.

The PIC must hold a commercial pilot licence, CAR certificate of validation or a Part 131 ASAO authorisation that is endorsed for operations within a control zone or a control area.

Operations in a control zone or a control area must be conducted in accordance with the AAI.

When operating in a control zone or control area, the PIC must:

- › notify ATC of any deviation from an ATC clearance
- › take positive action to comply with the clearance as soon as a deviation is recognised.



The following parts of an ATC clearance or instruction must always be read back by a flight crew member:

- › any safety related parts of the clearance
- › ATC route clearances, including amendments
- › clearances, conditional clearances, and instructions to wait, take off from, or land
- › the assigned altimeter settings, Mode A transponder codes, altitude instructions and operating area instructions
- › radio frequency instructions.

Prohibited, restricted and danger areas (91.260 and MOS 15.11, 15.12, 15.13)

A flight must not enter a prohibited area under any circumstance.

A flight must not enter an active restricted area without authorisation.

If the PIC becomes aware the aircraft is in an active prohibited or restricted area, the PIC must inform ATS or the controlling authority if possible and either:

- › fly out of the area
- › if unable to fly out of the area – land and then inform the controlling authority as soon as practicable.



Prohibited and restricted areas declared for three months or longer are published in the AIP. For shorter periods, they are published by NOTAM (see regulation 7 of the Airspace Regulations 2007).

Danger areas (Part 91 MOS 11.22)

A flight may enter and fly within or travel through a danger area provided:

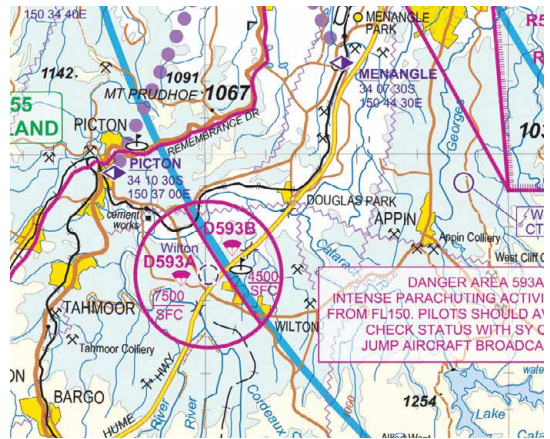
- › before the flight, the PIC is demonstrably aware of the specific activity that causes the area to be a danger area
- › before the flight, the PIC takes appropriate precautions against any safety risks that could arise from the flight.

Note: Danger areas in international airspace may lie in controlled airspace.



Details on prohibited, restricted and danger areas can be found in the relevant aeronautical charts, NOTAMS, the En Route Supplement Australia (ERSA-PRD) and the Designated Airspace Handbook (DAH).

Figure 16: Danger area



Military operating areas (MOAs) have been established at the following military bases and are distinguished with an 'M' prefix: Cerberus (Vic), Edinburgh (SA), East Sale (Vic), Nowra (NSW) and Williamtown (NSW).

MOAs are a subset of danger areas and require Australian registered aircraft to request a clearance to transit a MOA and to comply with any conditions of entry. Foreign registered aircraft can transit a MOA outside Australian territory without a clearance. Within Australian territory however, a clearance must be requested, and conditions of entry may be imposed.

Air defence identification zone flights (91.263)

If the PIC flies an aircraft into an air defence identification zone (ADIZ), they must comply with the procedures in the AAI for that zone.

Exception: *If the PIC enters an ADIZ and is unable to comply with the ADIZ procedures, no offence is committed if the PIC lands as soon as practicable and informs the controlling authority.*



An ADIZ is airspace with defined dimensions within which identification of all aircraft is required.

PIC to report hazards to air navigation (91.675)

If the PIC becomes aware of a hazard to air navigation that is not published in the AAI, as soon as practicable, they must report the hazard to:

- › ATS
- › the aerodrome operator if the hazard is on an aerodrome.

Exception: *If the PIC reasonably believes the hazard has already been reported, there is no need to make the report.*



When reporting the existence of a hazard to air navigation under this regulation, it is recommended that the reports include any detail which may be pertinent to the safety of other aircraft.



Image | Alan Shore

5.7 Use of radio and communication

Use of radio – qualifications (91.625)

The PIC must be authorised and qualified to transmit on a radio frequency that is published in the AIP or NOTAMS for:

- › air traffic services
- › a certified aerodrome
- › a registered aerodrome
- › a military aerodrome
- › a CTAF
- › an MBA
- › emergencies.

The authorisation or qualification for the use of a radio is issued:

- › under the law of the state of registry or of the operator for a foreign registered aircraft
- › as part of a Part 131 pilot authorisation.

Communication monitoring in controlled airspaces (91.635)

The PIC must continuously monitor the primary communications medium used by ATC while flying in controlled airspace.



The primary communications medium would normally be the ATC VHF radio frequency.

Broadcasts and reports (131.354 and MOS 16.02 to 16.05)

If the aircraft is fitted with, or carries a radio, the PIC must make the radio broadcasts and reports as set out in the MOS.



Where possible, standard words and phrases should be used. Where this is not possible, plain English should be used and the correct receipt of the intended message confirmed.

The PIC must make broadcasts and reports on the relevant published radio frequency unless ATS agrees to the use of a different frequency for special flight circumstances.

Note: Special flight circumstances include, for example, descent from controlled to non-controlled airspace, formation flights, search and rescue, police and security operations. You may initiate a request to ATS to agree to a changed radio frequency for special flight circumstances.

The PIC must make broadcasts on a common traffic advisory frequency (CTAF) for a non-controlled aerodrome if:

- › reasonably necessary to avoid the risk of a collision with another aircraft
- › operating at or in the vicinity of a non-controlled aerodrome, including a certified or military aerodrome

- › the aircraft is equipped with an operative VHF radio and you are qualified to use the radio.

When the aircraft is on the ground at a controlled aerodrome or flying in Class A, B, C or D airspace, you must report and broadcast to ATS according to the following table.



When leaving controlled airspace on descent, you must make a report to the ATS for the Class G airspace that you will descend into. This is to ensure that separation with any aircraft operating near the base of controlled airspace is not compromised.



The Australian FIR does not currently have Class B airspace.

Table 16: Class A, B, C or D airspace – reporting requirements

Situation	Report
Ready to launch	Report the situation
Airborne	Report the situation
Position report when required by the ATC service, or the route reporting requirements of the authorised aeronautical information	Report the situation
Previously reported position estimate is more than 2 minutes in error	Report the corrected position estimate
Aircraft performance degraded below either: <ul style="list-style-type: none"> › the level required for the airspace in which it is operating › the capability of the aircraft reported in the aircraft's flight notification 	Report the situation
Leaving a level or reaching an assigned level	Report the situation
Unable to comply with ATC clearances or instructions	Report the situation
Before leaving controlled airspace on descent	Report the situation
Landed	If cancelling SARWATCH – report cancellation

When flying in Class E or G airspace, you must make reports to ATS according to the following table.

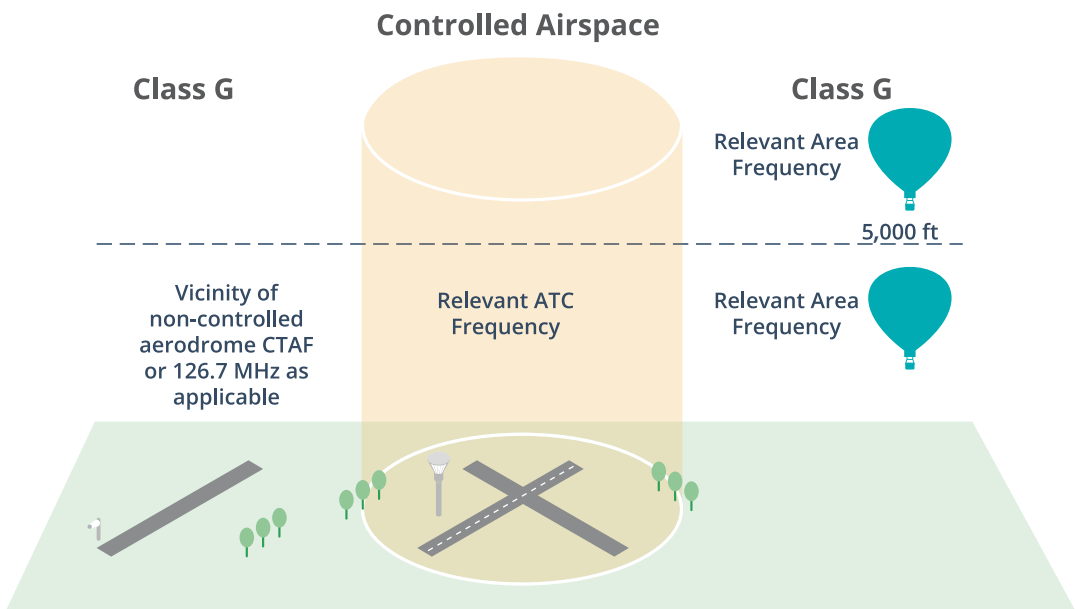
Table 17: Classes E and G airspace – reporting requirements

Situation	Report
Requiring clearance into controlled airspace	Report the situation
Before, and on completion of, over-water stage	Report in accordance with search and rescue reporting schedules if arranged before the over-water stage

Use of radio outside controlled airspaces — listening watch of radio transmissions (91.640)

For flights outside controlled airspace, the PIC must ensure that any radio transmissions are monitored continuously by a qualified pilot. This applies to aircraft fitted with or carrying a radio. Balloons operating with a radio must maintain a listening watch on the frequencies shown in the diagram below.

Figure 17: Listening watch and broadcast requirements



Meaning of ‘in the vicinity of a non-controlled aerodrome’ (91.360)

An aircraft is *in the vicinity of a non-controlled aerodrome* if it is:

- › in uncontrolled airspace
- › within 10 NM of the aerodrome
- › at a height above the aerodrome that could result in conflict with operations at the aerodrome.

For an aerodrome that has a reference point published in the AAI, the distance must be measured from that point.



Refer to AC 91-10 Operations in the vicinity of non-controlled aerodromes for guidance on operations in the vicinity of non-controlled aerodromes.



Useful information is also found in the Australian Transport Safety Bureau (ATSB) publication ‘A pilot’s guide to staying safe in the vicinity of non-controlled aerodromes’.

5.8 Operations on the ground

Operations at non-controlled aerodromes (131.360 and MOS 17.01 and 17.02)

The PIC must give way to avoid airborne collisions according to the right of way regulations in 91.325, 91.330 and 91.340. (See section 5.1 of this guide.)

The PIC must not operate an aircraft in a manner that is hazardous to another aircraft, person, or property. If aircraft operations are conducted in accordance with the civil aviation legislation, the operations are taken to not be creating a hazard.

The PIC may take off and land within 3 NM of a non-controlled aerodrome, or conduct manoeuvres necessary for a safe landing, if the PIC holds one of the following qualifications:

- › a current commercial pilot (balloon) licence (CP(B)L)
- › a current CAR certificate of validation
- › a current private pilot (balloon) permit issued by CASA that is endorsed for flight within 3 NM of a non-controlled aerodrome.

If the PIC does not hold the above qualifications, they cannot land or take off within 3 NM of a non-controlled aerodrome and must overfly any non-controlled aerodrome at a height of at least 2,000 ft AGL.

Procedures for safety during ground operations (131.370)

An AOC holder must have procedures in their exposition that will ensure the safety of persons in the vicinity of an aircraft when:

- › a person is embarking or disembarking the aircraft
- › the aircraft is being prepared for flight
- › the aircraft is being manoeuvred on the ground.

Parked aircraft not to create hazard (91.420)

A person must not park an aircraft in a place where it is a hazard to the movement of other aircraft. Consideration should also be given to parking an aircraft so that it does not create a hazard to other people or property both inside and outside an aerodrome perimeter.

Standard visual signals (91.670 and Part 91 MOS 2.04 and 2.05)

The PIC must comply with a standard visual signal during a flight unless they believe that doing so will endanger the safety of the aircraft, any person or property.

A person must not display a standard visual signal if it is likely to endanger the safety of the aircraft, any person or property.



Standard visual signals include light signals, ground marks and hand signals.

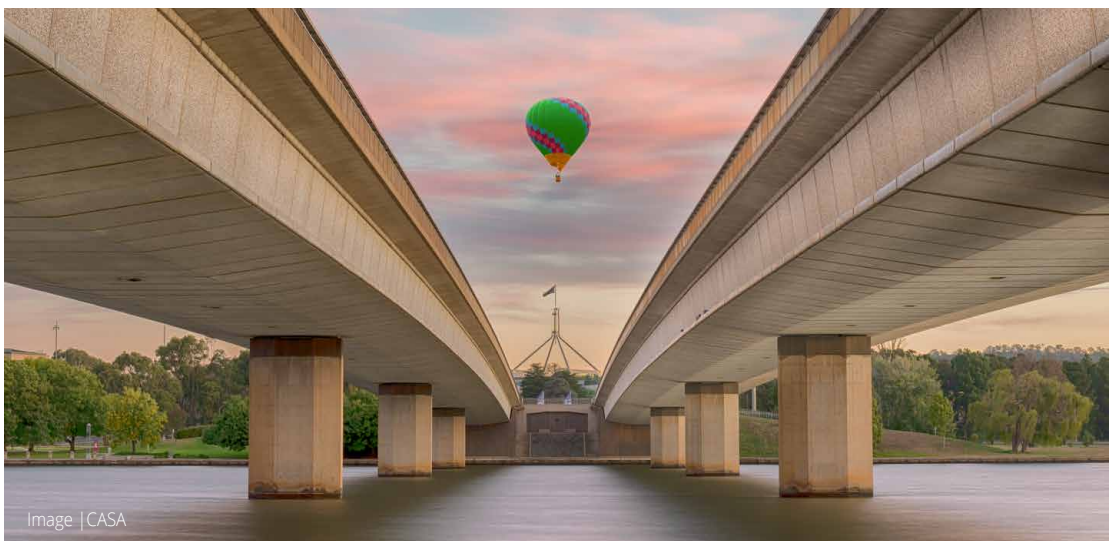







Image | CASA

Light or projectile signals to aircraft on an aerodrome or in flight (Part 91 MOS 2.04)

The following table shows prescribed aircraft light signals.

Table 18: Light signals to aircraft on an aerodrome or in flight




On ground	Light mode	In flight
Authorised to take-off if pilot is satisfied that no collision risk exists	 Green	Authorised to land if pilot is satisfied that no collision risk exists
Authorised to taxi if pilot is satisfied that no collision risk exists	 Green flashing	Return for landing
Stop	 Red	Give way to other aircraft Continue circling
Taxi clear of landing area In use	 Red flashing	Do not land Aerodrome unsafe
Return to starting point on aerodrome	 White flashing	

A series of projectiles, discharged at intervals of 10 seconds, showing/bursting, red or green lights, or stars, may be used to indicate that you are flying in or about to enter a prohibited, restricted or danger area. The PIC must take such remedial action as is necessary.

Ground signals for aircraft at aerodromes (Part 91 MOS 2.05)

The standard ground signals for aircraft at aerodromes are set out in the following table.

Table 19: Ground signals for aircraft at aerodromes

Ground signal		
		
Description		
White cross	White double cross	Horizontal white dumbbell
Where displayed		
<ul style="list-style-type: none">› Adjacent to wind direction indicator› On manoeuvring area	Adjacent to wind direction indicator	Adjacent to wind direction indicator
Meaning		
<ul style="list-style-type: none">› Aerodrome completely unserviceable› An area marked by a cross or crosses with the limit delineated by markers is unfit for use by aircraft	Gliding operations in progress	<ul style="list-style-type: none">› Use only hard surface movement areas› Where there are sealed and gravel manoeuvring areas, use only the sealed surfaces› Where there are constructed gravel and natural surface manoeuvring areas, use only the gravel surfaces (see <i>ERSA FAC</i> for any local information relating to the dumbbell signal)



5.9 Operation of Part 131 aircraft while tethered (other than a tethered gas balloon)

(131.375 and MOS 20.01 and 20.02)

To conduct a tethered flight in a balloon, the PIC must comply with the MOS requirements.

Note: See Subpart 131.Z for rules that apply to permanently tethered gas balloons.

This section does not apply to a flight of the following:

- › a Subpart 131.Z tethered gas balloon
- › a Part 131 aircraft that is tethered to the ground by a launch restraint prior to a free flight.

No person shall tether a balloon without permission:

- › on the movement area
- › on the runway
- › within the control zone of a controlled aerodrome
- › within 2 NM of a non-controlled aerodrome
- › if the crown of the balloon will exceed 400 ft AGL.

Written permission or an approval to tether a balloon can be obtained from:

- › ATC (when the ATC service is operating) for a controlled aerodrome
- › the aerodrome operator of a non-controlled aerodrome
- › CASA for a non-controlled aerodrome
- › CASA to exceed 400 ft AGL.

A balloon must not be tethered so that it obstructs an aircraft taking off from or approaching to land at:

- › a marked rotorcraft landing area
- › a rotorcraft landing area identified as such in the AAI
- › a runway.

5.10 Use of aerodromes

(91.410)

The PIC may only take off or land at one of the following places:

- › a certified or registered aerodrome
- › an aerodrome for which an arrangement under section 20 of the Act applies
- › a place suitable for taking off or landing in the circumstances.

The PIC must not take off or land unless they can do so safely considering all the circumstances, including the prevailing weather conditions.

5.11 Flights over water

Flights over water

(131.365 and MOS 18.03)

The PIC must comply with any requirements, in the circumstances prescribed in the MOS, when conducting operations over water. Water includes such things as the sea, a lake, a bay, or an estuary.

For intended, and unintended flights across water (including emergency landings), the PIC must consider the following before take-off (MOS 18.02):

- › exposure of any person on board to injury and to the relevant water survival aspects in the event of a ditching
- › the surface condition of the area of water, including the wave height, wind conditions and swell
- › the water and air temperatures
- › the distance, at any one time, the aircraft is from a suitable landing area
- › the availability and response-time of relevant search and rescue assets
- › the emergency and survival equipment carried on the aircraft.

Considering the risks identified, the PIC must decide whether to carry any of the following:

- › a life jacket or equivalent flotation device for each person on board the aircraft
- › an emergency locator transmitter

- › signalling equipment for making distress signals
- › other emergency equipment e.g. personal locator transmitters, warm or waterproof clothing, food and drink and/or lighting equipment.

An AOC holder must ensure that its exposition contains the procedures the PIC must follow with regard to flights over water.

The PIC and the operator assume responsibility for the lives of the persons on board the aircraft when determining the following:

- › the risks to the aircraft when flying over water
- › the chances of survival in the water if the aircraft ditches into the water.

Giving way to vessels (91.350)

When in level flight or manoeuvring near the surface of the water, the PIC must, as far as possible, keep clear of a vessel, or avoid impeding its navigation.

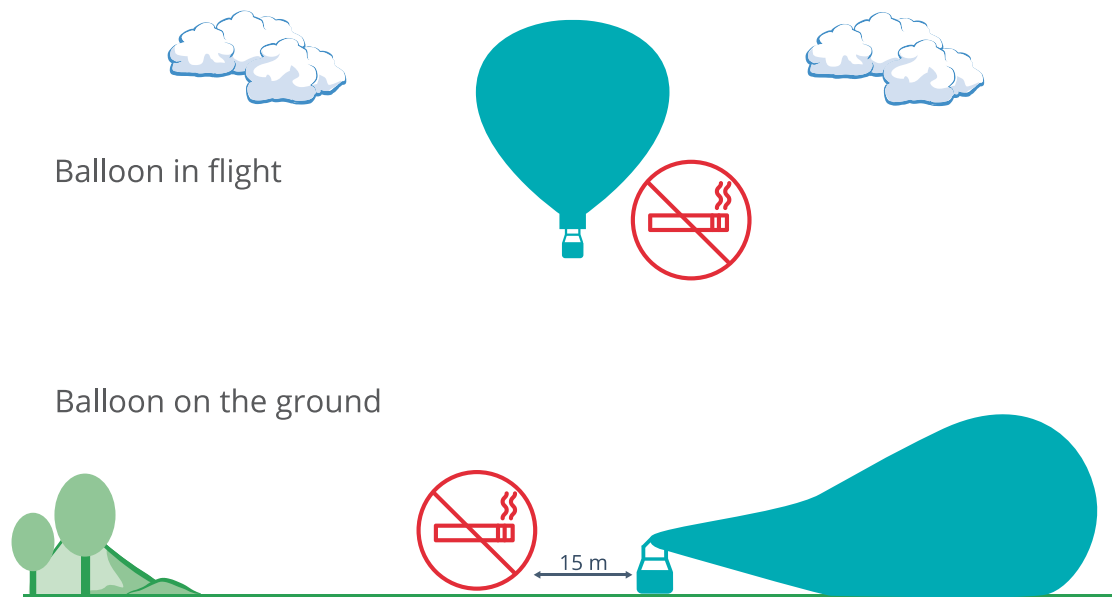
5.12 Smoking

(131.390 and 131.395)

No person is permitted to smoke during a flight or within 15 m of an aircraft that is being:

- › prepared for a flight
- › fuelled for a flight
- › deflated after a flight.

Figure 18: Smoking in and near balloons



Before a flight begins, an AOC holder must provide as many permanent 'no smoking' signs or graphics in the aircraft as are necessary to indicate to all occupants that smoking is not permitted.

5.13 Carriage of passengers

Carriage of passengers (131.455)

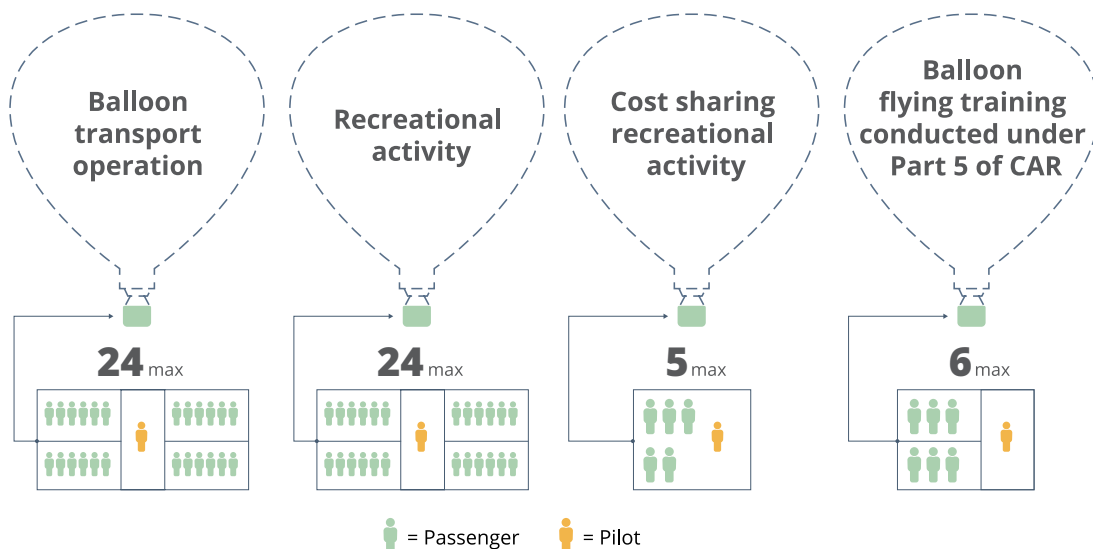
The PIC and the operator must comply with any MOS requirements regarding the location and maximum number of passengers that may be carried on an aircraft.

Maximum number of passengers on board (MOS 25.02 and 25.03)

These requirements apply to the carriage of passengers on a Part 131 aircraft flight that is:

- › a balloon transport operation
- › a specialised balloon operation
- › a Part 131 recreational activity
- › balloon flying training.

Figure 19: Maximum number of passengers on board



Note: For a specialised balloon operation, the number of passengers is specified by CASA in the approval.

Persons not to be carried in certain parts of aircraft (91.200)

The PIC and the operator must not allow a person to be carried on or in an aircraft or a thing attached to the aircraft that is not designed to carry crew members or passengers.

Exception: *This does not apply if:*

- › the aircraft is being used to make a parachute descent and the requirements detailed in the Part 105 MOS are met
- › you or the operator hold a 91.045 approval to allow such carriage.

Carriage of infants (131.400)

You must hold a 131.035 approval to carry an infant on a balloon transport operation.

Carriage of persons requiring assistance

(131.405 and MOS 22.02 and 22.03)

The PIC and operator must ensure that any person that requires assistance (due to sickness, injury, or disability), can be accommodated without causing a hazard to others. A person must not restrict the exit of any other person on the aircraft in the event of an emergency.

The PIC may only permit the carriage of a person who requires the use of a wheelchair:

- › in a basket that is constructed and equipped in accordance with the AFM for the that purpose
- › in accordance with the procedures specified in the AFM for that purpose.



Image | CASA

The PIC must ensure, if the basket has a wheelchair access door, only a flight or ground crew member closes and opens the door in accordance with the procedures in the AFM (except in an emergency on the ground).

An AOC holder must ensure their exposition includes procedures for the carriage of passengers who require special assistance due to sickness, injury or disability including:

- › a risk assessment
- › a passenger management procedure
- › a statement that passengers who require a wheelchair may only be carried:
 - » in a basket that is constructed and equipped in accordance with the AFM for the safe carriage of such a person
 - » in accordance with the procedures specified in the AFM for carriage of such a person
- › the operation and securing of the aircraft door when wheelchair passengers are carried
- › a process for specific assessment of flight weather and other conditions that may affect the safety of the balloon transport operation.

Offensive or disorderly behaviour on aircraft (91.525)

A person must not behave in an offensive or disorderly manner that may endanger the safety of the aircraft or persons on board.

The PIC, a crew member, or operator may refuse to allow a person to board an aircraft if they reasonably believe the person is likely to behave in an offensive or disorderly manner that could endanger the safety of the aircraft or persons on board.



Behaviour considered offensive or disorderly would include:

- › physical assault or threat to commit assault against a crew member
- › verbal intimidation or threat against a crew member that interferes with the performance of their duties
- › refusal to follow a lawful instruction given by or on behalf of the PIC
- › assault, intimidation or threat, whether physical or verbal, against another person
- › intentionally causing damage to, or destruction of, property
- › consuming alcoholic beverages or drugs resulting in intoxication
- › smoking on board
- › tampering with a control, fuel hose or any other safety-related device on board the aircraft
- › operating a portable electronic device when prohibited.

Manipulating flight controls (91.155)

The PIC must not allow a person to, and a person must not, manipulate the flight controls of the aircraft in flight unless the person holds a Part 131 pilot authorisation that authorises them to pilot the aircraft.



With respect to Australian aircraft, regulation 91.155 has direct relevance to the requirements outlined in subsection 20AB (1) of the Act, and to requirements under CASR Part 131.

5.14 Passengers safety briefings and instructions

Operator's exposition (MOS 23.04)

The AOC holder's exposition must contain:

- › the procedures and requirements for passenger safety briefings and instructions
- › details of when safety briefings and instructions must be given
- › the role and qualifications of personnel, other than the PIC, who may give the safety briefings and instructions.

Passengers — compliance with safety directions (131.420)

A passenger must comply with all safety directions given to them.

Passengers safety briefings and instructions (131.410)

The PIC and the operator must ensure that, both before take-off and when required during a flight, a passenger is provided with a safety briefing and instructions in accordance with the provisions in the MOS.

Safety briefing and instructions before take-off (MOS 23.02)

A safety briefing must be given to passengers before the aircraft takes off before a flight.

The briefing must be given by either the PIC, or another pilot designated by the PIC, to conduct the briefing. In the case of balloon transport operations a person who is not the PIC may be designated by the AOC holder to

conduct the briefing. This designated person must be qualified in accordance with the AOC holder's exposition.

The briefing must be given in a way that is understood and applies to all stages of flight including:

- › safety in relation to ground equipment, including any envelope inflation fans
- › safety in relation to any restricted access areas in the launch area
- › the role and authority of ground support personnel and the pilot in preserving safety (including through giving instructions)
- › the wearing of suitable clothing (with an indication of what is unsuitable)
- › smoking prohibitions around, and on board, the aircraft, including e-cigarettes
- › procedures for boarding the aircraft
- › the in-flight use and stowage of personal belongings and baggage
- › instructions to not interfere with the aircraft controls and equipment
- › the timing and posture for the landing position, as appropriate to the aircraft type design
- › the landing position for an emergency
- › a practice session for each passenger in adopting the correct landing position and the brace position
- › the importance of remaining on board the aircraft until instructed otherwise, particularly after landing
- › instructions on the location and use of any emergency equipment (including life jackets and oxygen equipment) that is provided for individual passenger use
- › general instructions on any possibility of emergency situations and how to respond
- › a demonstration of the method of donning and inflating life jackets prior to take-off (if required).



For passengers who do not speak English, the briefing must be supplemented by appropriate video, pictorial, or graphic material in the passenger's language unless the verbal briefing is given in that language.

Safety briefing and instructions before landing (MOS 23.03)

Shortly before landing, the PIC must remind passengers of the required landing position.

Before landing, the PIC must also tell passengers:

- › to stow personal belongings
- › assume the landing position
- › to stay on board until instructed to disembark.

Specific safety briefings (MOS 23.02)

The PIC must ensure a specific safety briefing is provided directly to any passenger:

- › requiring assistance on the flight, and to any person accompanying or assisting the passenger and must:
 - » include what to do if an emergency landing of the aircraft is necessary
 - » be given in a form appropriate to the passenger and the accompanying person
- › responsible for an infant on a flight that includes an explanation of how the infant must be restrained in normal operations and in an emergency.

Note: You must hold an approval under 131.035 to carry an infant on a balloon transport flight.



Image | Alan Shore

Safety briefing in the event of an emergency (131.415)

The AOC holder's exposition must include procedures for briefing passengers on what to do if an emergency occurs during a flight.

5.15 Carriage of cargo

Restraint of cargo (131.425)

The PIC and the operator must ensure that when the aircraft is landing, any cargo being carried is restrained or securely stowed.

Note: Cargo is anything carried or to be carried that is not a person.

Unauthorised travel or placing of cargo on aircraft (91.060)

The PIC or operator must give permission for any person to travel on, or place cargo on, an aircraft.

Carriage of cargo – general (91.600)

The PIC and the operator must not allow cargo to be carried in a place where:

- › it could damage, obstruct or cause the failure of a control, electrical wiring or a pipeline of the aircraft, or any other equipment that is essential to the safe operation of the aircraft
- › the cargo weight exceeds the load limitations for the floor structure or any other load-bearing components as detailed in the aircraft flight manual or a placard on the aircraft
- › an emergency exit is obstructed, or access restricted, unless CASA has given approval.

5.16 Carriage of animals

Procedures relating to carriage of animals (131.430)

The AOC holder's exposition must include procedures for the carriage of animals in an aircraft.



CASR 91.620 places the responsibility for ensuring the safety of the flight when an animal is carried on an aircraft onto the PIC and the operator. The operator's policy may be to never allow animals to be carried.

Carriage of animals (91.620)

This regulation includes all animals and is not limited to only assistance animals and places the responsibility on the PIC and the operator for ensuring the safety of the flight when an animal is carried on an aircraft.

The PIC must give permission for any animal to be brought onto or carried on an aircraft. When giving permission, consideration should be given to:

- › the type of animal
- › how it is being carried, contained and/or restrained
- › its reaction to noise and being out of its natural environment
- › nuisance to other passengers
- › distraction to flight crew
- › how excrement or fluids will be contained.

An AOC holder's exposition should provide instructions for carrying animals, including any limitations or requirements you expect personnel to observe and respect.

The PIC must take all reasonable steps to ensure carrying the animal will not adversely affect aviation safety before giving any permission. In general, carrying an animal is no different to carrying cargo. Animals must not block, impede access to, or escape through, an emergency exit.

Despite anything in the Disability Discrimination Act 1992, the carriage of an assistance animal (within the meaning of the Disability Discrimination Act 1992) can be refused if the PIC or the operator reasonably believes that it may have an adverse effect on aviation safety. Refer to AC 91-03 Carriage of assistance animals for detailed guidance on the carriage of assistance animals on aircraft.

5.17 Loading weights

Maximum loading weight (regulation 131.445)

The PIC and the operator must ensure that the aircraft is flown at a weight that is equal to or less than:

- › the maximum loading weight (however described) in the aircraft's flight manual
- › where the Part 131 MOS allows, the maximum weight calculated in accordance with the MOS method.

Circumstances and methods for calculating maximum weight (MOS 24.02)

Operators and pilots must ensure the maximum weight is not exceeded, and follow weight calculation procedures in their exposition, considering:

- › any manufacturer's loading systems
- › the ambient temperature and altitude at the launch site
- › the planned maximum altitude for the flight
- › the combined weight of all persons on board using either:
 - » actual clothed bodyweights measured or declared by the passenger
 - » the standard weights as detailed in the table below
 - » the passenger weight calculated in accordance with the exposition procedures for balloon transport operations
- › the weight of fuel or ballast on board
- › the weight of any equipment or cargo carried on board.

Table 20: Standard passenger weights

Maximum operational capacity	Adult male	Adult female	Infant	Child	Adolescent male	Adolescent female
7–9	86	71	17	44	65	58
10–14	86	70	16	43	64	58
15–19	85	69	16	43	63	57
20–39	84	69	16	42	63	57

In this table:

- › adult means a person who has turned 16
- › infant is a person who has not turned 2
- › child is a person who has turned 2 but not turned 13
- › adolescent means a person who has turned 13 but not turned 16
- › for a person whose gender is unspecified or indeterminate, the adult male weight shall be used.

Minimum loading weight (regulation 131.445)

The PIC and the operator must fly the aircraft at a weight that is equal to or greater than:

- › the aircraft's flight manual minimum loading weight (however described)
- › where the Part 131 MOS allows, the minimum weight calculated in accordance with the MOS method.

Circumstances and methods for calculating minimum loading weights (MOS 24.04)

Before take-off, the PIC must ensure the aircraft's minimum weight is maintained by following the weight-calculation procedures specified for the aircraft. The PIC must consider:

- › any manufacturer's loading systems
- › the combined weight of all persons on board
- › the weight of fuel or ballast on board
- › the weight of any equipment or cargo carried on board
- › any likely reductions in combined weight due to:
 - » planned reductions in the persons on board during the flight (for example, the dropping of one or more parachutists from the aircraft in flight)
 - » reductions of fuel or ballast during a flight
 - » reductions from the dropping of equipment or cargo from the aircraft in flight.

The combined weight of all persons on board may be calculated using the same methods used for calculating maximum loading weight as detailed above.

For balloon transport operations the AOC holder shall place relevant procedures into their exposition.



Only the larger hot air balloons are likely to have a minimum weight requirement.

Loading procedures (131.450)

The AOC holder's exposition must include aircraft loading procedures that comply with regulation 131.445. The exposition must include procedures for:

- › determining the total weight of:
 - » the pilot(s) including their carry-on baggage
 - » any passengers including their carry-on baggage
 - » any cargo (other than carry-on baggage)
 - » any usable fuel and fuel containers to be carried
 - » any assembled balloon components
- › ensuring last-minute load changes do not exceed aircraft weight limits
- › ensuring offloading passengers or cargo does not contravene aircraft weight limits
- › ensuring the aircraft's minimum weight can be maintained throughout the flight
- › ensuring any ambient temperature increases before flight do not exceed aircraft weight limits.

5.18 Hang glider procedures (131.585)

If a Part 131 approved self-administering aviation organisation (ASAO) is approved to give a person the authority to carry a hang glider outside an aircraft, the ASAO's exposition must include procedures for such an activity.

Note: An ASAO, and the holder of an authorisation issued by an ASAO, must not contravene the ASAO's exposition. See regulations 149.345 and 149.410 regarding compliance with the ASAO's exposition.

5.19 Firearms

Possessing firearm on aircraft (91.160)

A person may only carry or possess a firearm on an aircraft if:

- › they are authorised under the aviation regulations or another law of the Commonwealth
- › the PIC or the operator has given consent.



When providing permission for a person to carry or possess firearms on board an aircraft, the PIC should ensure:

- › the person possesses appropriate current federal, state or territory licence for the firearm
- › the person does not perform any duty as a flight crew member while having a firearm in their possession
- › the firearm is unloaded at all times
- › only the following types of firearms are taken on the aircraft:
 - » shotguns
 - » semi-automatic shotguns
 - » net guns
 - » anaesthetising guns
 - » rifles
 - » semi-automatic rifles
 - » handguns
 - » other types of guns in secured cases.

The PIC of the aircraft should not handle the firearm at any time during the flight and should consider any other applicable state and territory laws.



Ammunition is classified as dangerous goods. The carriage of ammunition on board an aircraft must therefore be in accordance with the requirements of Part 92.

Discharging firearm on aircraft (91.165)

No person may discharge a firearm while on board an aircraft unless they are authorised under the aviation regulations or another law of the Commonwealth.

5.20 Portable electronic devices (PEDs)

(91.170 and 91.175)

A *portable electronic device* (PED) is any lightweight, electrically powered equipment. These devices are typically consumer electronic devices capable of communication, data processing and/or utility. Examples range from tablets, e-readers, and smart phones to electronic games. A PED might be transmitting or non-transmitting.

A person may only operate a PED on the aircraft with the PIC's permission. The PIC may only give permission if they have determined that the device will not affect the safety of the aircraft.

A person must stop using the device at the PIC's direction.



When giving permission, the PIC should consider any relevant limitation in the AFM, the aircraft manufacturer's supplementary data (if any) and their operational experience with that type of PED. Considerations should include hazards associated with:

- › PEDs used during various phases of flight
- › improperly stowed PED
- › impeded or slowed evacuations
- › passenger non-compliance e.g. not switching off PEDs, or not stowing PEDs properly
- › disruptive passengers
- › battery fire.

Flight crew members (FCMs) must not must not operate a PED at any time during a flight if it is likely to distract them from performing their duties.



This does not prevent flight crew from using portable electronic flight aids such as maps or navigation aids.

5.21 Simulation of emergency or abnormal situations

Simulation of emergency or abnormal situations (131.250)

The conduct of simulated emergencies or abnormal situations during a balloon transport flight is not permitted.



Emergency procedures may be practised on flying training or checking flights without passengers on board, or on the ground.

Causing or simulating failure of flight instruments (91.715)

The PIC may only fail or simulate a failure of the altimeter when it is for pilot training, checking or testing, and only required crew members are on the aircraft.

The PIC must also be qualified to train, check or test, and if the flight is at night, must have a clear view of another altimeter.

Exception: *The above requirement does not apply if it is part of a maintenance test flight, or a procedure to diagnose or isolate a failure of an instrument or system.*

5.22 Prohibiting person affected by psychoactive substances from boarding

(91.790)

The operator or any crew member may stop a person from boarding if, on reasonable grounds, they believe that the person is affected by a psychoactive substance such that they may present a hazard to the aircraft or to a person on board.

5.23 Provision and consumption of alcohol

Passengers – alcohol (91.780)

A passenger on a flight may only consume alcohol:

- › if the alcohol has been provided by a crew member
- › if permitted by the PIC (if there is no other crew member on board).

Crew – provision of alcohol (91.785)

A crew member must not provide alcohol to a passenger if they reasonably believe the passenger is affected by one or more psychoactive substances such that their behaviour may present a hazard to the aircraft, or to a person on board.

5.24 Miscellaneous

Test flights (131.440)

For balloon transport operations, the PIC must not permit test flight checks (other than checks associated with the normal operation of the aircraft) to occur on a balloon transport operation.

Air displays in Australian territory (91.180)

The operator and the PIC of an air display flight must ensure the person conducting the air display holds an approval. Individual participants in the air display do not need to hold an approval.



For guidance on air displays, see CASA's website: [Air displays | Civil Aviation Safety Authority \(casa.gov.au\)](https://www.casa.gov.au/air-displays)

Picking up or setting down people or things during flight (91.195)

The PIC must not pick up or set down a person or anything during a flight unless they hold an approval, or it is permitted by another regulation.

PIC to report emergencies (91.680)

The PIC must inform ATS of any threat to the safety of the aircraft or its occupants (an emergency). If the aircraft is carrying dangerous goods, the PIC must also advise ATS of the nature and state of the goods.



In the event of an emergency, the PIC should be aware of the phrase 'aviate, navigate, communicate'. The priorities in order of importance are to maintain (or regain) control of the aircraft, navigate clear of obstacles and communicate with ATS or other stations.

Note: It must be practicable for the PIC to do so and they have a means of communicating with ATS.

PIC to report contraventions relating to emergencies (91.690)

Incident, accident and emergency reporting is a valuable tool in maintaining aviation safety. Effective reporting allows organisations, such as CASA and the ATSB, to notice trends occurring within the aviation sector. Only where trends are observed can mitigating actions be identified and implemented.

Under the *Transport Safety Investigation Act 2003*, reports of accidents and incidents are defined by the AIP as either an Immediately Reportable Matter (IRM) or Routinely Reportable Matter (RRM). The definition and reporting requirements of an IRM or RRM are contained in the AIP. In addition to reporting of an IRM and RRM, a report must be made to CASA whenever a CASR is contravened during the management of an emergency.

For regulation 91.690, the PIC must give notice of a contravention of the regulations that occurred during a flight to deal with an emergency that threatened the safety of the aircraft.

If the pilot must act in an emergency in a way that results in a contravention of a regulation, the pilot and the operator are both responsible for ensuring CASA is notified of the contravention. The notification must:

- › be made in writing
- › include the details and circumstances of the contravention
- › be made within two business days after the day of the emergency.

No-one is excused from giving notice by claiming that the information might tend to incriminate or expose them to a penalty.

Except where the report contains false or misleading statements, information or documents in the notice, or any document or thing provided, directly or indirectly, is not admissible in evidence in criminal proceedings. However, providing false or misleading information or documents is an offence under the Criminal Code.

Interception of aircraft (91.695 and Part 91 MOS 23.02)

If an aircraft is intercepted by another aircraft, the PIC must comply with the Part 91 MOS procedures.



This is an extremely unlikely event for a Part 131 aircraft. The Part 91 MOS procedures refer to:

- › ICAO Annex 2 – Appendix 1 – Signals – Section 2 – Signals for use in the event of interception
- › ICAO Annex 2 – Appendix 2 – Interception of Civil Aircraft, Attachment A – Interception of Civil Aircraft.



The ICAO procedures referred to above are reproduced in Aeronautical Information Publication (AIP) icao.int/publications/Pages/default.aspx

Aviation distress signals (91.700)

If the PIC, or another person on the aircraft, has made an aviation distress signal and the reason for making the signal no longer exists, the signal must be cancelled as soon as possible if the aircraft location and state of the aircraft's radio permits.



CHAPTER 6

MANAGING YOUR TRAINING AND QUALIFICATIONS



Chapter 6 – Managing your training and qualifications

This chapter describes the training and qualification requirements under Part 131 including training records, types of qualifications, minimum experience levels, training, recency and assessments (checks for the issue of certificates or licences).

Licensing requirements are further detailed in chapter 7 of this guide.

6.1 Personnel training and checking records — making and availability of records

(131.215 and 131.220)

The AOC holder must ensure training and checking records pertaining to activities, qualifications, certification and/or flying experience are made within 21 days and show completion dates and any assessed competencies.

The following recording requirements apply:

- › for flight crew members, records relating to:
 - » training, checking, flight tests, flight reviews and/or assessments of competency
 - » qualifications or certificates
 - » flying experience
 - » training or education in the safety management system (if any)
- › for operational safety-critical personnel (other than a flight crew member), records relating to training or education in the safety management system (if any)
- › for personnel who perform ground support duties, records relating to any training
- › for other personnel, records relating to training or education in the safety management system (if any).

The AOC holder must provide a person their training and checking record within 7 days of receiving the request. This includes requests from another operator provided the person to whom the record relates has given written permission to allow a copy of their record to be shared.

6.2 Qualifications and training for pilots 131.N

(131.565)

An operator must ensure the pilot of a Part 131 aircraft holds one or more of the following qualifications to pilot a Part 131 aircraft:

- › a commercial pilot (balloon) licence
- › a CAR certificate of validation
- › an authorisation from a Part 131 ASAO.

Exception: *A person may operate a Part 131 aircraft without holding a commercial pilot (balloon) licence (CP(B)L) or a CAR certificate of validation if the person is accompanied by a flight instructor and is receiving balloon flying training, or is attempting a flight test for a CP(B)L. See regulation 5.03 of CAR.*

The pilot must also meet:

- › *training and checking requirements for the flight prescribed by the Part 131 MOS*
- › *any other qualification or experience prescribed by the Part 131 MOS.*

An AOC holder may also include additional qualifications or experience in their exposition for a pilot of a balloon transport operation.

If the flight is a specialised balloon operation, the operator must ensure the pilot has any other qualification or experience specified in the approval that authorises the operation.

Training and checking

(MOS 27.01, 27.02 and 27.03)

Before commencing a flight that is for hire or reward, the PIC must have successfully completed a balloon flight review in accordance with regulation 5.143 of CAR.

Note: The flight review must have been completed within two years immediately before the day of the flight. See also section 7.4 of this guide.

Before commencing a flight, which is a recreational activity, the PIC must meet any training and checking requirements of the Part 131 ASAO that administers recreational activities.

If a pilot holds a Part 131 ASAO pilot authorisation, they must meet any training and checking requirements prescribed by the Part 131 ASAO that will allow them to continue to fly under that authorisation.

Other qualifications or experience (MOS 27.05, 27.06, 27.08, 27.09, 27.10, and 27.11)

Balloon class endorsement

Prior to commencing a flight in a free crewed balloon as the PIC, the pilot must hold a commercial pilot (balloon licence), or a CAR certificate of validation issued by CASA and a balloon class endorsements for the class of balloon. For class endorsements that apply to a CP(B)L, see section 7.6 of this guide.

Night VFR flight

Before commencing a night VFR flight as the PIC of a recreational activity, the PIC must:

- › successfully complete a check flight and demonstrate sufficient knowledge of the equipment systems and operational requirements for safe night VFR flight
- › meet the day VFR recency requirements of the Part 131 ASAO.

Before commencing a night VFR flight as the PIC of a flight that is not a recreational activity, the PIC must meet the recent experience requirements of regulation 5.144 of CAR. See section 7.7 of this guide.

Note: To conduct a balloon transport flight at night the PIC must also hold a balloon grade of night VFR rating (see section 7.7 of this guide).



Image | Alan Shore

Induction training and area familiarisation

Before acting as the PIC of a balloon transport flight, the AOC holder must ensure the PIC satisfactorily completes the induction training and area familiarisation set out in their exposition.

Emergency training and competency

Before assigning a person to act as a pilot in a balloon transport operation, the AOC holder must ensure the pilot completes training, along with a competency check, in at least the following:

- › general emergency procedures
- › procedures for dealing with specific emergency situations including:
 - » fire in the air or on the ground, including the use of fire extinguishers
 - » a flammable gas leak in the air or on the ground
 - » a powerline contact
 - » emergency evacuation from the launch field or the balloon basket
 - » ditching in water (if operations are planned or likely to traverse any body of water, such as a lake, a bay, or an estuary, at a horizontal distance of more than 1 km from the shore for longer than 5 minutes before being again over land)
 - » landing in trees
 - » preparation for, and handling of, a hard landing
 - » emergency landing, whether with or without ground support personnel
 - » search and rescue procedures
- › locating, accessing, and using the emergency and survival equipment on the aircraft
- › actions in the event of an emergency with an inflation fan.



The AOC holder must ensure the competency check occurs at intervals of no more than 24 months. The competency check is considered to have been completed on the due date if the check was successfully completed within 90 days before or after the due date. The result is that the due date does not change.

Recurrent training does not need to include the in-water component of the life jacket training and assessment.

Transition training

To act as PIC of a balloon transport operations, the AOC holder must ensure the pilot successfully completes transition training including:

- › training in their duties and responsibilities
- › training in the procedures relating to the AOC holder's operations
- › training in the normal and emergency procedures for the relevant aircraft
- › training in the conduct of a passenger briefing and safety demonstration for the relevant aircraft.

Once trained, the pilot must undertake the AOC holder's proficiency check which shall include all the above items.

Requirements for individuals conducting training and checking (MOS 27.12 and 27.14)

Training and checking of flight crew must be conducted and assessed by an approved training and check person who is either:

- › the operator's head of flying operations, if authorised by the operator's exposition
- › a person authorised by Part 5 of CAR to conduct a balloon flight review.

An approved flight crew training and check person shall conduct training and checking for:

- › emergency training (MOS 27.09)
- › emergency competency check (MOS 27.09 and 27.11)
- › transition training (MOS 27.10)
- › proficiency check (MOS 27.10).

See Appendix D at the end of this guide for details of these requirements.

An AOC holder's exposition must contain:

- › procedures relating to the training and checking requirements of this section
- › details of the content and duration of the training provided to ensure regulatory compliance.

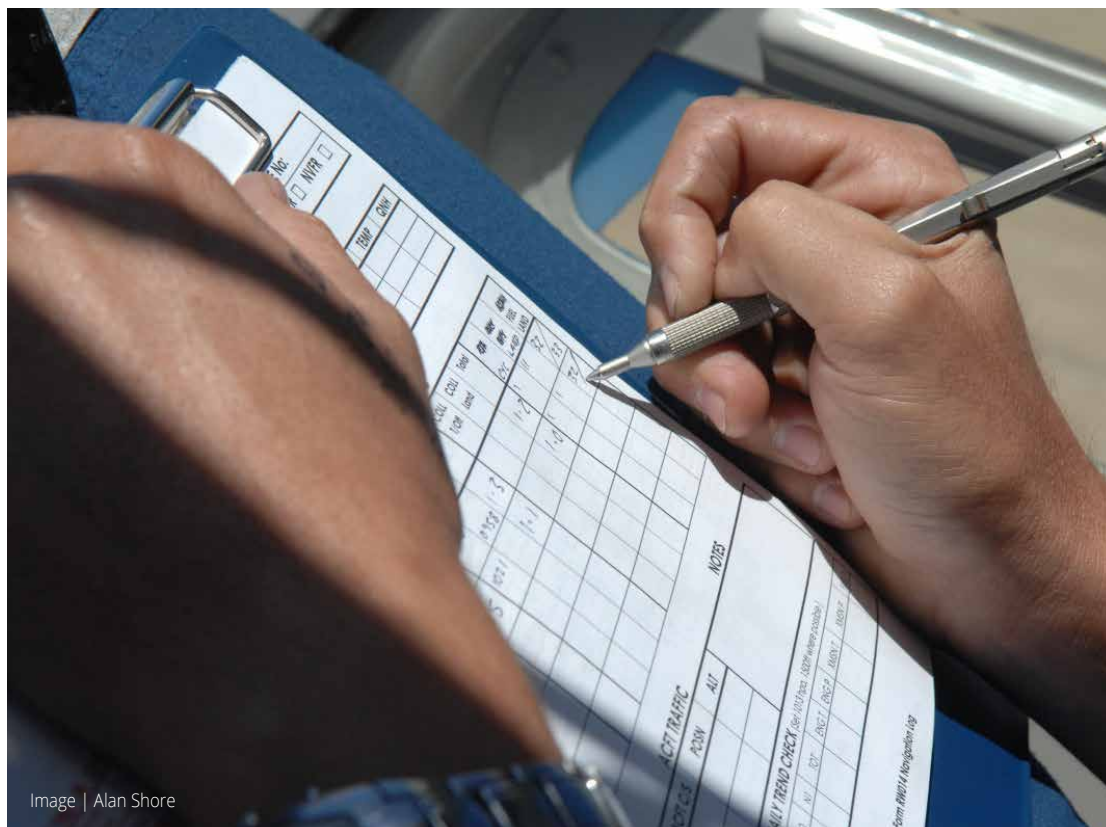


Image | Alan Shore

6.3 Qualifications and training for ground support personnel

(131.570 and MOS 28.02)

An AOC holder must ensure that when a flight begins:

- › each ground support person who carries out a duty for the flight has met all MOS training and checking requirements
- › the number of ground support personnel is at least the number of personnel prescribed by the MOS for the number of passengers carried. (See section 3.9 in this guide.)

An AOC holder must ensure that any ground support personnel (before commencing ground support duties without direct supervision), have successfully completed:

- › induction training
- › a check of competency in the execution of normal and emergency procedures within the preceding 24 months.

The AOC holder's exposition must detail the training and competency required for ground support personnel for their induction and normal and emergency procedures training.

The training and checking is considered to have been completed on the due date if the check was successfully completed within 90 days before the due date. The result is that the due date does not change.

The AOC holder must retain a record of the names of the ground support personnel who have undertaken the check of competency, and the dates and results of all checks. These records must be retained while the person is employed with the AOC holder, and for 12 months after their employment ceases.

Requirements for individuals conducting training and checking (MOS 28.02, 28.03 and 28.05)

An AOC holder's ground support personnel training and checking must be conducted and assessed by an approved training and check person who is either:

- › the operator's head of flying operations, if authorised by the operator's exposition
- › a person authorised by Part 5 of CAR to conduct a balloon flight review.

An AOC holder's approved ground support training and check person shall conduct training and checking for:

- › induction training
- › emergency competency check.

An AOC holder's exposition must contain:

- › procedures relating to the training and checking requirements of this section
- › details of the content and duration of the training you provide to ensure competency.

Competence of ground support personnel (131.300)

An AOC holder must ensure that any ground support personnel have been trained and assessed as being competent to perform a duty before they commence the duty.

Division 131.P.2—Other operational support personnel – this Division is reserved for future use.

6.4 Balloon flying schools

A balloon flying school is a school which holds an AOC that authorises it to conduct balloon flying training.

Transfer of student records (CAR 5.57)

Where a student moves from one balloon flying training school to another, on written or oral request, the old school must give the new school a copy of the student's records.



A student record means the record of a person's progress in balloon flying training and ground training kept by the balloon flying school.

Chief balloon flying instructor (CFI) (CAR 5.58)

A chief balloon flying instructor means a person:

- › who holds a current flight instructor (balloon) rating
- › who is appointed by a balloon flying school to supervise the balloon flying training given by the school
- › whose appointment is approved by CASA.

CASA, subject to any condition that is necessary for the safety of air navigation, may approve a CFI of a balloon flying school if they hold the necessary qualifications. The approval may be subject to conditions expressed in the approval or directions in the CAO.

A CFI must comply with any condition in the approval or any direction in the CAO.

CASA may, in writing, revoke an approval if:

- › a CFI ceases to hold the required qualifications
- › there are reasonable grounds for believing that the CFI has contravened an approval condition
- › it is necessary to do so in the interests of the safety of air navigation.

If CASA revokes an approval, the grounds for the revocation must be given in writing.

Syllabuses of training (CAR 5.59)

CASA may publish syllabuses of training for:

- › balloons
- › balloon flight crew ratings
- › flight radiotelephone operator.

Refer to the syllabus at: casa.gov.au/licences-and-certificates/pilots/pilot-and-flight-crew-exams/pilot-exams/commercial-pilot-licence-balloon-exams-clwb-and-copb



Image | Alan Shore



CHAPTER 7

COMMERCIAL BALLOON FLIGHT CREW LICENSING



Chapter 7 – Commercial balloon flight crew licensing

This chapter details requirements and privileges for a commercial (balloon) pilot licence (CP(B) L), a balloon flight radio operator licence and associated balloon flight crew endorsements and ratings. It also outlines the application processes. These regulations are in CAR Part 5.

This chapter does not cover licensing for large gas airships. This is covered in Part 61 Flight crew licensing. All references in this chapter to pilots, flight instructors, examiners, licences etc refer to balloons unless otherwise stated.

The term 'you' refers to the licence holder or the person applying for the licence.



This chapter often refers to 'aerial work' and 'charter'. Under Part 131 these terms are no longer used. The terms specialised balloon operations and balloon transport operations respectively have replaced the old terms of aerial work and charter and have been included in this guide. In time, CAO 40.7 will either be amended or included in the Part 131 Manual of Standards.



Prior to 2 December 2023, recreational activities and private pilot authorisations were managed by the Australian Balloon Federation (ABF). From 2 December 2023, private pilot (balloon) permits are issued by CASA. Your private pilot (balloon) permit has the same privileges and limitations and you must continue to abide by any conditions of your certificate or permit. Private balloon licensing is not covered in this guide as it is primarily intended for commercial balloon operators.

7.1 Training flight limitations

(131.435)

Balloon flying training for a pilot authorisation or for the initial granting of a commercial pilot (balloon) licence in accordance with Part 5 of CAR may not be conducted on a balloon transport flight.



A pilot may fly as pilot in command under supervision (PICUS) on a balloon transport flight providing they are accompanied by a PIC.



Image 1 Jay Schesser

7.2 Definitions for CAR Part 5

Part 5 of CAR has some specific definitions.

(approved) balloon testing officer (ABTO) for a flight test for a balloon class endorsement or balloon flight crew rating	a person to whom CASA's Director of Aviation Safety has delegated a specified power.								
balloon flight crew licence	a holder of: <ul style="list-style-type: none"> › a CP(B)L › a flight radiotelephone operator licence. 								
balloon flight crew rating	rating is required to give: <ul style="list-style-type: none"> › balloon flying training – and is referred to as a flight instructor (balloon) rating › fly at night under the VFR – and is referred to as a balloon grade night VFR rating. 								
balloon flying training	flight time in a balloon for the purpose of increasing a person's skill in flying the balloon.								
balloon proficiency check	a test of a person's aeronautical skills and aeronautical knowledge relevant to balloon flight.								
CASA flying operations inspector (FOI)	a person employed by CASA as either: <ul style="list-style-type: none"> › a flying operations inspector (however described) › a senior flying operations inspector (however described). 								
classes of balloon	<table> <tr> <th>class of balloon</th><th>Description of balloon</th></tr> <tr> <td>Class 1</td><td>hot air balloons that have a volume of not more than 260 000 cubic feet</td></tr> <tr> <td>Class 2</td><td>hot air balloons that have a volume of more than 260 000 cubic feet</td></tr> <tr> <td>Class 3</td><td>gas balloons</td></tr> </table>	class of balloon	Description of balloon	Class 1	hot air balloons that have a volume of not more than 260 000 cubic feet	Class 2	hot air balloons that have a volume of more than 260 000 cubic feet	Class 3	gas balloons
class of balloon	Description of balloon								
Class 1	hot air balloons that have a volume of not more than 260 000 cubic feet								
Class 2	hot air balloons that have a volume of more than 260 000 cubic feet								
Class 3	gas balloons								
competent authority	in relation to a foreign country, means the body that has responsibility for the licensing of persons to fly balloons in private operations in that country.								
equivalence in relation to an Australian commercial (balloon) pilot licence	is where the overseas certificate issued by a competent authority authorises the person to fly as pilot in command in specialised balloon operations and balloon transport.								
examiner	a CASA flying operations inspector (FOI) or an approved balloon testing officer (ABTO) who may conduct a commercial pilot (balloon) licence flight test.								
flight radiotelephone practical test	a practical test of a person's knowledge and skill in the use of an aeronautical radio set by CASA under sub regulation 5.41.								
flight test	a practical test of a person's aeronautical knowledge and practical flying skill set by CASA under sub regulation 5.41.								

overseas balloon authorisation	<p>an authorisation (however described) that:</p> <ul style="list-style-type: none">› authorises the holder to perform activities essential to the operation of a balloon during flight time, and› is issued by the responsible authority of a contracting state.
overseas balloon endorsement	<p>a qualification (whether it is called an endorsement, rating or authority, or is known by some other name) that:</p> <ul style="list-style-type: none">› authorises the holder of the qualification to fly a particular class of balloon; and› was issued by the overseas national aviation authority. <p>An overseas balloon endorsement is at least the equivalent of a particular class of balloon endorsement if it authorises the holder of the overseas balloon endorsement to fly, as pilot in command in specialised balloon or balloon transport operations, a balloon that meets the description of the particular class of balloon.</p>
overseas medical certificate	<p>in relation to an overseas balloon authorisation, means a certificate that:</p> <ul style="list-style-type: none">› is issued by the responsible authority of the contracting state that issued the authorisation, and› indicates that its holder meets the medical standard set by the responsible authority, and› authorises its holder to exercise the authority given by the authorisation in the contracting state.
private pilot (balloon) permit	<p>a permit that is issued by the Civil Aviation Safety Authority (CASA).</p>
responsible organisation	<ul style="list-style-type: none">› the responsible authority of a contracting state, or› the Defence Force of Australia, or of a contracting state.
syllabus	<p>a syllabus of training published under CAR 5.59.</p>
theory examination	<p>an examination set under CAR 5.41.</p>



Image | CASA

7.3 Medical certificates

Requirements for a balloon flight crew licence (CAR 5.04)

Before you may exercise the privileges of your licence you must hold either:

- › a current class 1 or class 2 medical certificate
- › a permission from CASA.

CASA may, on receipt of a written or oral application authorise you to fly an Australian balloon without a current medical certificate if:

- › in all the circumstances it is reasonable to do so
- › it will not adversely affect the safety of air navigation.

Note: Class 1 and 2 medical certificate standards are set out in and issued under Part 67 of CASR.

Requirements for flight tests (CAR 5.07)

You must not undertake a flight test for a CP(B)L unless you hold a class 1 or 2 medical certificate.

An approved balloon testing officer (ABTO) must not conduct a flight test for the issue of a CP(B)L or for the issue, or renewal, of a flight crew rating unless the person being tested holds either:

- › a current class 1 or 2 medical certificate
- › a CAR certificate of validation for an overseas balloon authorisation and a current overseas medical certificate for that authorisation.

Overseas medical certificate requirements for a CAR certificate of validation (CAR 5.05)

If you hold a CAR certificate of validation for an overseas balloon authorisation and you are required to hold an overseas medical certificate in that country, you must ensure that you hold the overseas valid medical certificate to exercise the authorisation.

7.4 Licensing

Authorisation to perform activities without commercial pilot (balloon) licence (CAR 5.03)

You may only perform an activity essential to the operation of an Australian balloon during flight without holding a CP(B)L or CAR certificate of validation if you are either:

- › accompanied by a balloon flight instructor, and receiving flying training
- › attempting a flight test for a CP(B)L.

Applying for a flight crew licence (CAR 5.08 and 5.09)

You may apply to CASA, in writing, for the issue of either or both:

- › a CP(B)L
- › a flight radiotelephone operator licence.

In your application for a flight crew licence you must disclose any:

- › matters that relate to the safety of air navigation
- › action taken by CASA or a responsible organisation regarding your authority to perform activities essential to the operation of a balloon during flight.

CASA may only issue you with a balloon flight crew licence if you:

- › have not knowingly or recklessly made a false or misleading statement in relation to your application
- › have a knowledge of the English language sufficient to enable you to safely exercise the privileges of your licence
- › are qualified to hold the licence (refer CAR 5.61 and 5.138)
- › are a suitable person to hold the licence.

When deciding whether you are a suitable person, CASA must only consider:

- › matters that relate to the safety of air navigation
- › action taken by CASA or a responsible organisation regarding your authority to perform activities essential to the operation of a balloon during flight time.

Commercial pilot (balloon) licences

Requirements to hold a commercial pilot (balloon) licence (CAR 5.138, 5.145 and 5.146)

To hold a CP(B)L you must:

- › be at least 18 years of age
- › hold a current private pilot (balloon) permit
- › have held for at least one year either:
 - » a private pilot (balloon) permit
 - » a certificate or licence issued by the competent authority of a foreign country that is at least equivalent to a private pilot (balloon) permit
- › have passed a CP(B)L theory examination
- › have passed a CP(B)L flight test
- › have completed a course of flying training:
 - » in accordance with the relevant syllabus
 - » that was conducted by an authorised balloon flight instructor
 - » that consisted of at least 8 hours that:
 - has been undertaken within 1 year immediately before the day you attempt the flight test
 - includes at least 3 flights in a free balloon and 1 flight in a tethered balloon
 - includes at least 3 inflations, and 3 deflations, of a balloon envelope
- › have at least 75 hours flight time as PIC of a balloon that includes a minimum of both:
 - » 60 hours free flight time
 - » 5 hours tethered flight time.



An authorised balloon flight instructor means a person who holds a current flight instructor (balloon) rating, and either:

- › *is the holder of an AOC that authorises balloon flying training*
- › *is employed to instruct by, or instructs under an arrangement with, a person who is the holder of an AOC that authorises balloon flying training.*

Authorisation (general) (CAR 5.139)

A CP(B)L permits you to fly as pilot in command or as copilot acting as PIC under supervision in a balloon specialised or balloon transport operation.



A specialised balloon operation does not necessarily require you to hold a CP(B)L. It depends on the conditions of the 131.035 approval.

Authorisations to fly balloon types and classes (CAR 5.140 and 5.141)

If you are a CP(B)L that conducts specialised balloon or balloon transport operation, you must hold an endorsement for the class of balloon to be flown. See CAO 40.7 Aircraft endorsements (balloons) and flight instructor (balloons) ratings as amended.

Before you may fly a specialised balloon operation (if it requires a CP(B)L) or balloon transport operation, you must have completed at least 2 flights as PIC or acting in command under supervision in a balloon that you intend to fly that has:

- › a fuel system of the same design
- › a deflation system of the same design
- › an envelope capacity equal to, or greater than, the balloon intended to be flown.

Each flight must include at least:

- › 1 inflation of the balloon envelope
- › 30 minutes of free flight time
- › 1 deflation of the balloon envelope.

Ratings required (CAR 5.142)

If you hold a CP(B)L, you are authorised to pilot a balloon as the PIC or copilot for the activity if you either:

- › hold the flight crew rating that allows the flight
- › are undertaking dual flight training with a person approved by CASA under CAR 5.20.

A CP(B)L permits you to fly a tethered balloon at night under the VFR without holding a balloon grade of night VFR rating.

Regular flight reviews required (CAR 5.143)

As a CP(B)L holder you may undertake a specialised balloon operation for which a CP(B)L is required and a balloon transport operation, if you have:

- › within 2 years immediately before the day of the flight completed a flight review (conducted by an appropriate person) which included at least:
 - » 1 inflation of the balloon envelope
 - » 30 minutes of flight time
 - » 1 deflation of the balloon envelope
- › had your logbook endorsed by the person conducting the review if they are satisfied you can undertake specialised balloon operations and balloon transport operations.



An appropriate person means a balloon flight instructor, a CASA FOI, or an authorised person who holds the relevant balloon endorsement.

Exception: A flight review requirement may be satisfied if within the period of 2 years immediately before the day of a proposed flight, you have:

- › passed a flight test for either:
 - » the issue of a CP(B)L
 - » the issue, or renewal, of a flight instructor (balloon) rating
- › satisfactorily completed either:
 - » a balloon proficiency check
 - » a balloon conversion training by balloon flight instructor.

Recent experience requirements (CAR 5.144)

You may only act as PIC or act in command under supervision as a CP(B)L holder during a specialised balloon operation for which a CP(B)L is required or a balloon transport operation if within the 90 days immediately before the flight, you have undertaken a flight that required at least:

- › 1 inflation of the balloon envelope
- › 30 minutes of free flight time
- › 1 deflation of the balloon envelope.

Flight tests (CAR 5.147)

A CP(B)L flight test may only be conducted by a CASA flying operations inspector (FOI) or an approved person.

If you are a CP(B)L applicant, the test can only be attempted:

- › in a balloon that you hold a balloon class endorsement for
- › if you have been recommended for the test by the CFI of the school where you intend to attempt the test.

The CFI must ensure that you:

- › are at least 17 years of age
- › hold or have held one of the following for at least one year:
 - » a private pilot (balloon) permit
 - » a certificate or licence issued by the competent authority of a foreign country that is at least equivalent to a private pilot (balloon) permit
- › have passed a CP(B)L theory examination
- › have completed a course of flying training:
 - » in accordance with the relevant syllabus
 - » that was conducted by an authorised balloon flight instructor
 - » that consisted of at least 8 hours that:
 - has been undertaken within 1 year immediately before the day the CP(B)L applicant attempts the flight test
 - includes at least 3 flights in a free balloon and 1 flight in a tethered balloon
 - includes at least 3 inflations, and 3 deflations, of a balloon envelope
- › have at least 75 hours flight time as PIC of a balloon that includes a minimum of both:
 - » 60 hours free flight time
 - » 5 hours tethered flight time.



Although you can undertake the test at 17 years of age you cannot hold a CP(B)L until you are 18 years of age (see above in this section).

Flight radiotelephone operator licence (CAR 5.61, 5.62 and 5.63)

A flight radiotelephone operator licence authorises you to use both:

- › a fitted or portable aircraft radio on the ground and during flight
- › a radio in connection with an aircraft.

Note: You must not transmit on a radio frequency used for ensuring the safety of air navigation without holding a radiotelephone operator licence.

Table 21: Issue of a flight radiotelephone operator licence

To be issued a flight radiotelephone operator licence, one of the following sets of conditions must be met
<ul style="list-style-type: none">› be at least 16› have passed the Australian flight radiotelephone theory examination› have passed the Australian flight radiotelephone practical test
<ul style="list-style-type: none">› be at least 16› hold or have held an overseas radio licence that allowed you to use a radio during flight
<ul style="list-style-type: none">› be at least 16› hold or have held a qualification issued by the Defence Force of Australia that CASA is satisfied is an equivalent

The flight radiotelephone theory examination and the flight radiotelephone practical test must be conducted only by a CASA flying operation inspector or an approved check radio operator.



An approved check radio operator means a person who holds:

- › a commercial (balloon) pilot licence (CP(B)L)
- › a flight instructor (balloon) rating.

An overseas radio licence means a licence (however described) issued in accordance with Annex 1 to the Chicago Convention by a country that is a signatory to the International Telecommunication Convention.

7.5 Certificates of validation of overseas qualifications

Overseas qualifications

If you hold, or have held an overseas balloon authorisation that is at least equivalent to the qualifications of a CP(B)L, you may hold a CP(B)L. Those qualifications are that you must:

- › be at least 18 years of age
- › hold a current private pilot (balloon) permit
- › have held for at least one year a certificate or licence issued by the competent authority of a foreign country that is at least equivalent to a private pilot (balloon) permit
- › have passed a CP(B)L theory examination
- › have passed a CP(B)L flight test if you do not currently hold an equivalent overseas qualification
- › have at least 75 hours flight time as PIC of a balloon that includes a minimum of both:
 - › 60 hours free flight time
 - › 5 hours tethered flight time.

Applying for a certificate of validation (CAR 5.27)

You may apply to CASA, in writing, for the issue of a CAR certificate of validation of an overseas balloon authorisation, provided the authorisation is valid. If the authorisation requires an overseas medical to be valid, the required medical certificate must be valid.

CASA may issue a CAR certificate of validation provided you:

- › have a knowledge of the English language which enables you to safely exercise the certificate of validation
- › are a suitable person to hold the certificate
- › have passed the CAR certificate of validation examination that CASA considers necessary in the interests of the safety of air navigation.

CASA may only set and conduct examinations for a CAR certificate of validation examination based on examination materials published by CASA.



CASA must not issue a CAR certificate of validation if you have knowingly or recklessly made a false or misleading statement in relation to your application or you do not satisfy the above requirements.

When deciding whether you are suitable, CASA must only consider:

- › matters that relate to the safety of air navigation
- › action taken by CASA or a responsible organisation regarding your authority to perform activities essential to the operation of a balloon during flight time.

When applying for a balloon flight crew licence you must disclose any:

- › matters that relate to the safety of air navigation
- › action taken by CASA or a responsible organisation regarding your authority to perform activities essential to the operation of a balloon during flight.

CAR certificate of validation (CAR 5.30)

When issuing you with a CAR certificate of validation for an overseas balloon authorisation, CASA must enter on the certificate:

- › the name of the country in which the overseas authorisation was issued
- › the name of the overseas authorisation
- › the period of validity of the overseas authorisation
- › the serial number or reference number of the overseas authorisation.

The effect of CAR certificate of validation (CAR 5.31)

A CAR certificate of validation for an overseas balloon authorisation is equivalent to:

- › a flight crew licence – providing the authorisation allows you to perform the same activities as the licence
- › a class endorsement – providing the authorisation allows you to perform the same activities as the endorsement in the same balloon class
- › a flight crew rating – providing the authorisation allows you to perform the same activities as the rating.

Period of validity (CAR 5.32)

A CAR certificate of validation for an overseas balloon authorisation is valid until whichever of the following occurs first:

- › 3 months has passed from the day the certificate was issued
- › the time set out by CASA on the certificate has been reached
- › it is suspended or cancelled
- › the date the overseas authorisation ceases to be in force
- › until the overseas medical certificate ends (where the overseas authorisation requires such a medical certificate).

Offences relating to the application of a CAR certificate of validation (CAR 5.33)

You must not make an application for a CAR certificate of validation for an overseas balloon authorisation or operate under that certificate of validation unless:

- › the overseas balloon authorisation is current
- › if you are required to hold an overseas medical certificate, the medical certificate for the authorisation is valid.

7.6 Aircraft endorsements that apply to a CP(B)L

(CAR 5.23, CAO 40.7)

Issue of a balloon class endorsement (CAR 5.23)

CASA may give directions in a CAO setting out requirements for the issue of balloon class endorsements. These directions are set out in [Civil Aviation Order 40.7 – Aircraft endorsements \(balloons\) and flight instructor \(balloons\) ratings \(02/12/2004\) \(legislation.gov.au\)](#)

If you satisfy the requirements for the issue of the endorsement, CASA must issue a balloon class endorsement providing you hold a CP(B)L or a CAR certificate of validation for an equivalent overseas balloon authorisation by entering the endorsement in your logbook.

CASA must not issue you with a balloon class endorsement if you have knowingly or recklessly made a false or misleading statement in relation to your application.

Class 1 balloon endorsement

A Class 1 balloon is a hot air balloon that has a volume of not more than 260,000 cubic feet.

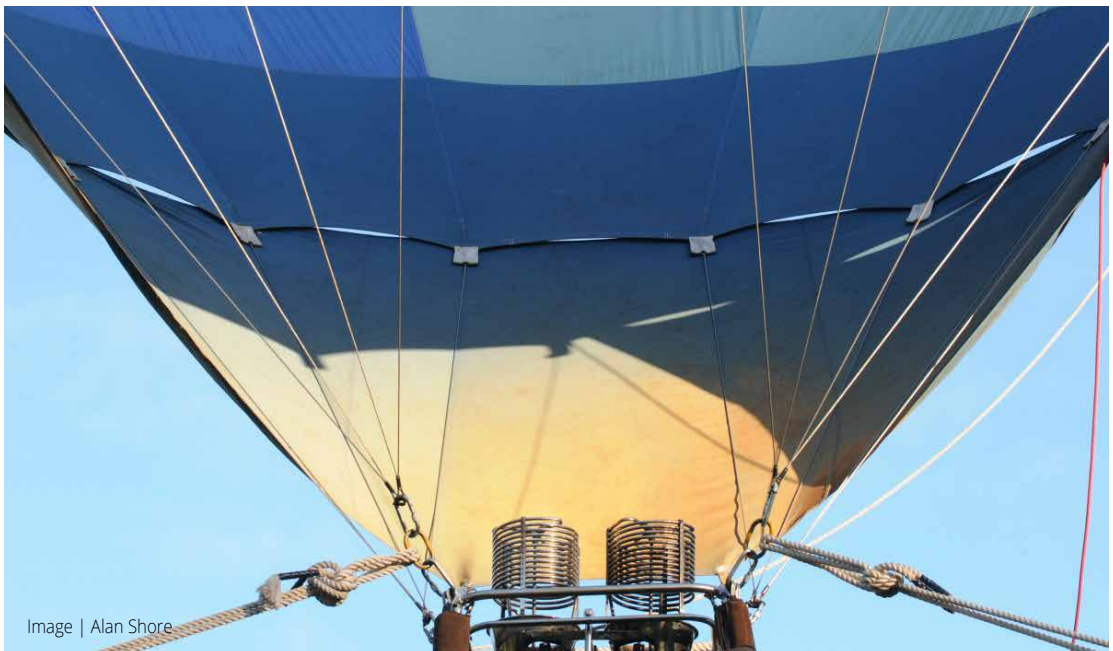


Image | Alan Shore

Eligibility

To apply for a Class 1 (R) balloon endorsement you must:

- › be qualified to hold a CP(B)L (see above in this chapter)
- › have a logbook that may be endorsed for a Class 1 balloon by the person conducting the flight test, using CASA Form 214.

Class 1 (restricted) endorsement

The initial issue of a Class 1 balloon endorsement is a Class 1 (Restricted) endorsement. This restricts the number of passengers you can carry.

Once you have completed a satisfactory flight test, the examiner must endorse your logbook with a Class 1 (R) endorsement by:

- › applying the relevant Class 1 (R) sticky label from the completed CASA Form 214 and then sending the top copy to CASA for its records
- › recording in your logbook their name, ARN and signature.

The endorsement permits you to act, as pilot in command:

- › in a Class 1 balloon that carries no more than 7 people including you
- › in a balloon operation conducted under an air operator's certificate (AOC).

Removal of restriction

To have your class 1 restriction removed you must:

- › be qualified for the balloon type you propose to fly
- › have completed at least 2 flights (see below in this section) as PIC or acting in command under supervision in a balloon that you propose to fly that has:
 - » a fuel system of the same design
 - » a deflation system of the same design
 - » an envelope capacity equal to, or greater than, the balloon that you propose to fly

- › at least 5 hours (that includes at least 5 take-offs and landings) as PICUS in the balloon type, specifically in AOC operations carrying 7 or more people, with 1 of the following as pilot in command (PIC):
 - » the chief pilot of the AOC holder
 - » the holder of a flight instructor (balloon) rating
- › have completed a proficiency check flight of at least 1 hour with 1 balloon inflation and deflation as PICUS in the balloon type in AOC operations with the PIC that is either:
 - » the chief pilot of the AOC
 - » an examiner.

Each of the 2 flights described above must include:

- › at least 1 inflation of the balloon envelope
- › at least 30 minutes of free flight time
- › at least 1 deflation of the balloon envelope.

The chief pilot or flight instructor with whom you undertake your PICUS must:

- › hold a Class 1 (Unrestricted) endorsement
- › be authorised in the balloon type
- › have at least 25 hours' experience flying a balloon whose envelope volume is equal to or greater than that of the balloon being flown.

At the end of the proficiency check flight, the PIC who conducted the proficiency check must:

- › determine if you are competent to fly 7 or more passengers in an AOC operation
- › if competent, recommend you by entering in your logbook, that you are endorsed with a Class 1 (U) endorsement.

Note: An actual endorsement only takes effect when the label from Form 214 has been affixed to your logbook by an examiner.

Class 1 (unrestricted) endorsement

The Class 1 (U) endorsement recommendation must be in the following form:

Name of endorsement holder [logbook holder] and ARN is recommended to be endorsed to fly a Class 1 balloon with 7 or more passengers subject to the limitations of the balloon type.

Signature of recommender and date.

Printed name of recommender and ARN.

Qualifications of recommender — delete those not applicable below:

- › Examiner (Approved Balloon Testing Officer or CASA FOI)
- › Flight Instructor (Balloon) holder
- › Chief Pilot of [Name the Balloon AOC holder.

The PIC (chief pilot or examiner) who completed the proficiency check flight must complete a proficiency check flight report.

Note: A proficiency check flight report using the Balloon Flight Review form in Appendix E to CAAP 5.81-01 is an acceptable means of compliance.

A copy of the proficiency check flight report must be kept in safe custody by both:

- › you (the logbook holder)
- › the chief pilot of the AOC holder.

Within 14 days after making the recommendation, the PIC (chief pilot or examiner) must give a copy of the proficiency check flight report and your logbook to an examiner who, if satisfied, must endorse your logbook with the Class 1 (U) endorsement by:

- › applying the relevant Class 1 (U) sticky label from the completed CASA Form 214 sending the top copy to CASA for its records
- › recording in your logbook their name, ARN, date.

Note 1: The endorsement only takes effect when the label has been affixed to the endorsement holder's logbook by an examiner.

Note 2: An examiner who conducts the proficiency check flight may be both the recommender and the examiner.

Class 2 balloon endorsement

Eligibility

If you are seeking a Class 2 balloon endorsement you must:

- › hold a Class 1 (U) endorsement
- › have at least 175 hours as PIC of any Class 1 balloon
- › have at least 80 hours as PIC in balloon charter flights.

Note: Flight time as PICUS does not constitute flight time as PIC.

You must pass a proficiency check flight, in a Class 2 balloon of the type for which you are seeking a Class 2 balloon endorsement conducted by 1 of the following who holds a Class 2 (U) endorsement:

- › an examiner
- › if an examiner is not available, a flight instructor (balloon), approved in writing by CASA to conduct Class 2 balloon endorsement proficiency check flights.

You must have a logbook that can be endorsed for a Class 2 balloon using CASA Form 214 by one of the following:

- › an examiner, who conducted the proficiency check flight
- › another examiner, provided they have received from the examiner or the flight instructor (balloon) who conducted the proficiency check flight:
 - » a written recommendation to make the endorsement
 - » a proficiency check flight report
 - » your logbook.

Class 2 (restricted) endorsement

A Class 2 (R) balloon endorsement remains valid until the restriction is removed.

The Class 2 (R) endorsement permits you to fly a Class 2 balloon with an envelope volume not greater than 400,000 cubic feet in an AOC operation.

The examiner who conducts your proficiency check flight must endorse your logbook with a Class 2 (R) endorsement by:

- › applying the relevant Class 2 (R) sticky label from the completed CASA Form 214 and sending the top copy to CASA for its records
- › recording in the logbook their name, ARN, date and signature.

If you satisfy the eligibility requirements and the proficiency check flight was conducted by a flight instructor (balloon), following a satisfactory completion the flight instructor must recommend, through an entry in your logbook, that you are to be endorsed for a Class 2 (R) endorsement by an examiner.

The examiner, having been provided with a written recommendation to make the endorsement, must, if satisfied, endorse your logbook with a Class 2 (R) endorsement by:

- › applying the relevant Class 2 (R) sticky label from the completed CASA Form 214 and sending the top copy to CASA for its records
- › recording in your logbook their name, ARN, date and signature.

Removal of restriction

The restriction can only be removed from your Class 2 (R) endorsement if you:

- › are authorised to fly the balloon type that you propose to fly
- › have completed at least 5 hours (involving at least 5 take-offs and landings) as PICUS in the balloon type in AOC operations with 1 of the following as PIC:
 - » the chief pilot of the AOC holder for the AOC operations
 - » the holder of a flight instructor (balloon) rating
- › have completed a proficiency check flight of at least 1 hour with 1 balloon inflation and deflation as PICUS in the balloon type in AOC operations with the PIC that is either:
 - » a PIC mentioned above (chief pilot or instructor)
 - » an examiner who holds a Class 2 balloon endorsement, authorised in the balloon type and has at least 25 hours' experience flying a balloon whose envelope volume is equal to or greater than that of the balloon type.

The chief pilot or flight instructor with whom you undertake your PICUS must:

- › hold an unrestricted Class 2 (U) balloon endorsement
- › be authorised in the balloon type
- › have at least 25 hours' experience flying a balloon whose envelope volume is equal to or greater than that of the balloon type.

At the end of the proficiency check flight, the person who was the PIC (chief pilot or instructor) must:

- › determine if you are competent to fly the balloon type with an envelope volume that is greater than 400,000 cubic feet in an AOC operation
- › if you are competent, recommend, through an entry in your logbook, that you be endorsed with a Class 2 (U) endorsement by an examiner.

Note: An actual endorsement only takes effect when the label from Form 214 has been affixed to the applicant's logbook by an examiner.

Class 2 (unrestricted) endorsement

The class 2 (U) endorsement recommendation must be in the following form:

Name of endorsement holder [logbook holder] and ARN is recommended to be endorsed to fly a Class 2 balloon with an envelope volume that is greater than 400,000 cubic feet in an AOC operation, subject to the limitations of the balloon type.

Signature of recommender and date.

Printed name of recommender and ARN.

Qualifications of recommender — delete those not applicable below:

- › *Examiner (Approved Balloon Testing Officer (ABTO) or CASA FOI).*
- › *Flight Instructor (Balloon) holder.*
- › *Chief Pilot of [Name the Balloon AOC holder.*

The recommender must complete a proficiency check flight report.

Note: A proficiency check flight report using the balloon flight review form in Appendix E to CAAP 5.81-1(1) is an acceptable means of compliance.

A copy of the flight report must be kept in safe custody by:

- › the logbook holder
- › the chief pilot of the AOC holder.

Within 14 days after making the recommendation, the recommender must give a copy of the proficiency check flight report and the applicant's logbook to an examiner who, if satisfied must endorse the logbook by:

- › applying the relevant Class 2 (U) sticky label from the completed CASA Form 214 and sending the top copy to CASA for its records
- › recording in the logbook the name, ARN, date and signature of the examiner.

Note 1: The endorsement only takes effect when the label has been affixed to the endorsement holder's logbook by an examiner.

Note 2: An examiner who conducts the proficiency check flight may be both the recommender and the examiner.

Class 3 gas balloon endorsement

CASA may issue a Class 3 gas balloon endorsement only after assessing that your detailed safety case, that must be submitted with the application, is satisfactory for aviation safety.

Note: Gas balloons are generally small and carry no more than 2 persons. They are not currently in use for air transport operations in Australia and training is not available. If there is a requirement for gas balloon endorsements in the future, it is likely that Civil Aviation Order (CAO) 40.7 would be amended to specifically address that contingency.

Validity of overseas balloon endorsements

Overseas balloon endorsement for restricted or unrestricted Class 1 balloon endorsement

If you hold an overseas balloon endorsement issued on or after 1 September 2019 and you are seeking a Class 1 (R) or (U) endorsement you must:

- › hold an overseas balloon endorsement that is at least the equivalent of a Class 1 (R) endorsement or a Class 1 (U) endorsement
- › be qualified to hold a commercial pilot (balloon) licence
- › have an ARN, and a logbook that is capable of being endorsed.

Under CAR 5.147, the flight test required to be qualified to hold a commercial pilot (balloon) licence is conducted by an examiner who applies the label from the completed CASA Form 214 and sends the top copy to CASA for its records.

If you satisfy the requirements above, then the examiner who conducted your flight test must endorse your logbook:

- › with a Class 1 (U) endorsement – provided your logbook contains persuasive evidence that your relevant overseas balloon endorsement authorises you to operate to the equivalent of a Class 1 balloon carrying more than 7 people (including yourself) in a balloon operation that is an AOC operation or equivalent
- › with a Class 1 (R) endorsement – if the above is not the case.

The examiner must apply the relevant Class 1 (R) or Class 1 (U) sticky label from the completed CASA Form 214 and send the top copy to CASA for its records, and record in the logbook the name, ARN, date and signature of the examiner.

A person who is issued with a Class 1 (R) endorsement may have the restriction removed only if the removal process previously described in this chapter for a Class 1 (U) is complied with.

Overseas balloon endorsement for restricted or unrestricted Class 2 balloon endorsement

If you hold an overseas balloon endorsement issued on or after 1 September 2019 and you are seeking a Class 2 (R) or (U) endorsement you must:

- › have passed a commercial pilot (balloon) licence theory examination
- › have an ARN, and a logbook that is capable of being endorsed
- › have persuasive logbook evidence of the required hours of experience (See section 7.6 of this guide.)

Under CAR 5.147, the flight test is conducted by an examiner who applies the label from the completed CASA Form 214 and sends the top copy to CASA for its records.

If you satisfy the requirements, the examiner who conducted your flight test must endorse your logbook:

- › with a Class 2 (U) endorsement – provided your logbook contains persuasive evidence that the relevant overseas balloon endorsement authorises you to operate a Class 2 balloon or equivalent, with an envelope volume that is greater than 400,000 cubic feet, in a balloon operation that is an AOC operation or equivalent, and
- › based on the Class 2 (U) endorsement
- › with a Class 1 (U) endorsement, if not already so endorsed, or with
- › a Class 2 (R) endorsement
- › based on the Class 2 (R) endorsement with a Class 1 (U) endorsement, if not already so endorsed.



Image | CASA

The endorsement by the examiner must apply the relevant Class 2 (R) or Class 2 (U) sticky label from the completed CASA Form 214 and sending the top copy to CASA for its records and:

- › record the relevant Class 1 (U) endorsement on the form
- › record in the logbook the name, ARN, date and signature of the examiner.

A person who is issued with a Class 2 (R) endorsement may have the restriction removed only if the removal process previously described in this chapter is followed.

Transitional application for Class 1 endorsement, Class 2 endorsement, and Class 3 gas balloon endorsement

CASA has changed the requirements for the balloon endorsement classification system.

If immediately before 1 September 2019 you held an old class of balloon endorsement issued under the old CAO 40.7 (as in force immediately before 1 September 2019), you are considered a grandfathered person and taken to hold the balloon endorsement mentioned in the following table.

Table 22: New for old endorsements of grandfathered persons

Old endorsement	New endorsement
Class 1 endorsement issued before 1 September 2014	Class 1 (R)
Class 2 endorsement issued before 1 September 2014	Class 1 (U)
Class 3 endorsement issued before 1 September 2014	Class 2 (R)
Class 4 endorsement issued before 1 September 2014	Class 2 (U)
Class 1 endorsement issued on or after 1 September 2014	Class 1 (U)
Class 2 endorsement issued on or after 1 September 2014	Class 2 (U)

7.7 Ratings that apply to a CP(B)L

(CAR 5.13 to 5.20, CAO 40.7 and 40.2.2)

General

Applying for a balloon flight crew rating (CAR 5.13)

If you hold a CP(B)L or a CAR certificate of validation for an overseas balloon authorisation that is equivalent to a CP(B)L, you may apply to CASA for the issue of:

- › a flight instructor (balloon) rating
- › a balloon grade of night VFR rating.

Issuing or renewing a balloon flight crew rating (CAR 5.14)

Provided you have passed the necessary flight test and satisfied any other requirements or conditions, CASA must issue or renew your balloon flight crew rating by entering the rating in your logbook.

CASA must not issue or renew a rating if you have:

- › knowingly or recklessly made a false or misleading statement in your application
- › not satisfied the requirements.

Validity of a balloon flight crew rating (CAR 5.17)

Your balloon flight crew rating is valid from the day on which it is issued, or renewed, until the earlier of:

- › the end of the period set out in the CAO for the kind of rating:
 - » CAO 40.7 Instructor rating is valid for 1 year on initial issue and 2 years thereafter
 - » CAO 40.2.2 Night VFR rating is valid for 1 year
- › the end of the period set out by CASA in your logbook for the kind of rating
- › it is suspended or cancelled.

When entering your balloon flight crew rating in your logbook, CASA may set out the validity period of the rating.

CASA may give directions in the CAO setting out the validity period of a balloon flight crew rating.

Authority of a balloon flight crew rating and flight tests (CAR 5.18 and 5.19)

CASA may give directions through the CAO, about:

- › the authority given by a balloon flight crew rating
- › the limitations on that authority
- › the flight tests that must be passed, or any other requirement that must be satisfied before that authority may be exercised.

CASA may describe through the CAO, the flight tests for the issue of a balloon flight crew rating, including:

- › any condition that must be satisfied
- › the content of any test that must be passed
- › the way in which a test is to be conducted.

CASA may conduct the flight tests in relation to balloon flight crew ratings that are required in the CAO.

CASA approval to give training (CAR 5.20)

If you hold a CP(B)L, you may be approved by CASA to give balloon flying training for a flight crew rating. In the approval, CASA may include any condition necessary in the interest of safety of air navigation.

You must not contravene any conditions in the approval or given as a direction via the CAOs.

CASA may, in writing, revoke your approval if:

- › your CP(B)L is suspended or cancelled
- › a court makes an order under section 30A of the Act that affects the authority given by a CP(B)L
- › there are reasonable grounds for believing that you have contravened a condition in your approval
- › it is necessary to do so in the interests of the safety of air navigation.

If CASA revokes your approval, CASA must give written notice that sets out the grounds for the revocation.

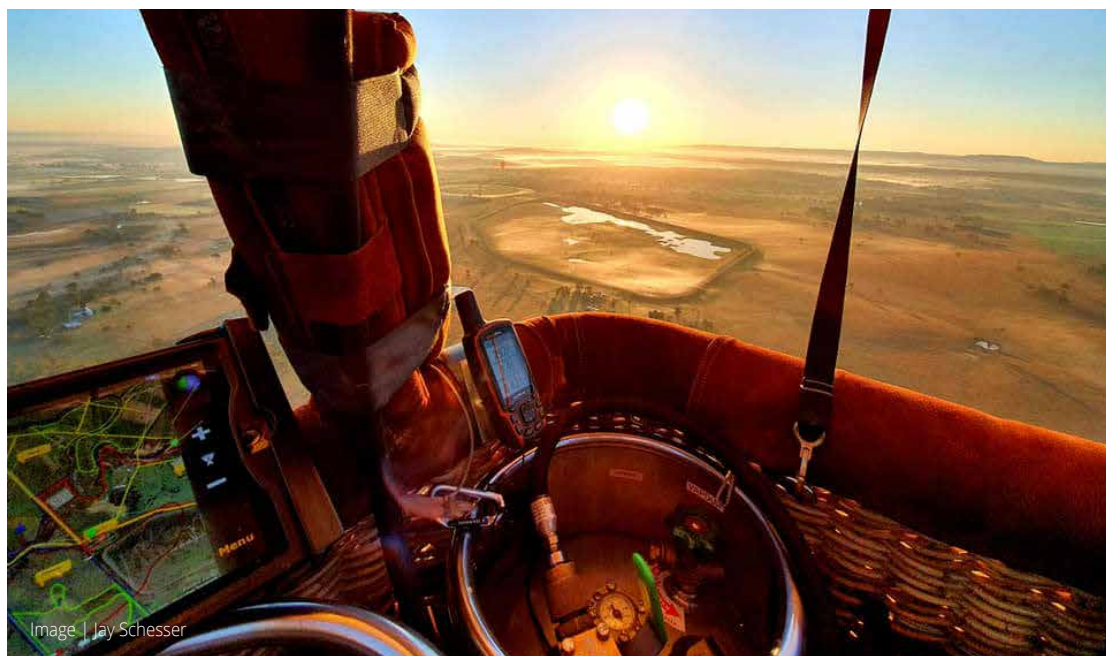


Image | Jay Schesser

Flight instructor (balloon) rating (CAO 40.7)

This section is for commercial balloon pilots who wish to hold a flight instructor (balloon) rating.

Issue and renewal

For the issue or renewal of a flight instructor (balloon) rating you must:

- › have at least 250 hours as pilot in command that includes not less than:
 - » 100 hours free flight time in a balloon engaged in charter operations
 - » 5 hours tethered flight time
- › have held a commercial pilot (balloon) licence that has been in force for the last 2 years
- › have passed a flight test conducted by CASA, an approved balloon testing officer or an approved person in accordance with the flight instructor (balloon) rating flight test report form.

A flight instructor (balloon) rating remains valid for either:

- › 1 year from the last day of the month in which the rating was issued
- › 2 years from the last day of the month in which the rating was renewed.

Your flight instructor rating is renewed from its expiry date if you take the flight test up to 90 days prior to the rating expiry. If your rating is renewed at any other time (outside the 90 days prior), your rating is renewed on the day the flight test is passed.

Instructor privileges

A flight instructor (balloon) rating authorises you to:

- › give flying training:
 - » in accordance with the balloon syllabus
 - » for the issue of an aircraft endorsement for a balloon, being an endorsement held by the flight instructor
 - » for the issue or renewal of a balloon instructor rating (if the flight instructor is approved to do so)
 - » for the issue of a balloon grade of night VFR rating if the flight instructor holds a balloon grade night VFR rating
- › conduct a proficiency check flight for a class of balloon endorsement, provided the flight instructor holds the same class of balloon endorsement without restriction
- › conduct a balloon flight review.

Balloon grade of night VFR rating (CAO 40.2.2)

This section is for commercial balloon pilots who wish to hold a balloon night VFR rating.

Application and aeronautical knowledge

Before you may take a flight test and be issued with a balloon grade of night VFR rating, you must:

- › hold a commercial pilot (balloon) licence
- › have at least 3 hours flight time as a pilot of a balloon flown at night
- › have satisfactorily completed a course of training that includes at least 3 flights at night with either:
 - » a person who holds a flight instructor (balloon) rating and a balloon grade of night VFR rating
 - » an approved person
- › have training in the aeronautical skills needed to control a balloon by reference to instruments
- › pass an examination conducted or set by CASA or an approved pilot.

Authority given by rating

A balloon grade of night VFR rating permits you to fly as pilot in command of balloons on specialised balloon operations or balloon transport flights by night under the VFR.

Flight test

To pass the flight test, you must satisfy CASA, an approved testing officer or an approved person, that you can safely carry out the following manoeuvres:

- › take off
- › climb to 1,500 feet above the ground at a nominated rate (+/- 20%)
- › level off and maintain +/- 100 feet for 5 minutes
- › descend to 500 feet above the ground at a nominated rate (+/- 20%)
- › level-off and maintain +/- 50 feet for 2 minutes
- › carry out necessary fuel management during a night flight whilst maintaining height +/- 100 feet
- › carry out passenger management during a night flight
- › in a surveyed area, descend to not more than 100 feet above the ground at a rate of not more than 100 feet per minute during the last 100 feet, for approach and overshoot to an emergency landing area. This manoeuvre may be followed by either a landing or a climb to a height of at least 100 feet above the ground to continue the flight.

Before you can carry passengers in a balloon transport operation at night, you must have passed the flight test described above in the balloon of the class to be flown.

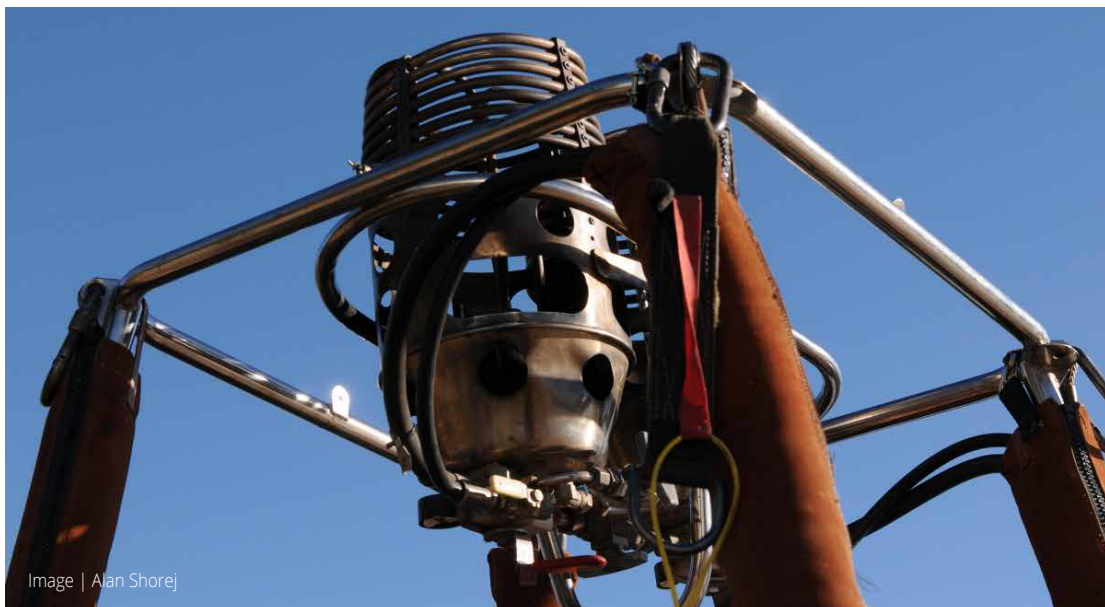


Image | Alan Shorej

Recent experience requirements

To exercise the privilege of your balloon grade of night VFR rating as pilot in command, you must have completed one or more of the following within 1 year before the day of the flight:

- › at least 1 flight of at least 30 minutes of a balloon at night as PIC, as PICUS or in dual flying
- › satisfactorily completed a balloon proficiency check conducted at night
- › passed a flight test that was conducted at night for the issue of a balloon pilot licence, or the issue, or renewal, of a balloon pilot rating.

Limitations

Your balloon night VFR rating permits you to land a balloon at night either:

- › while giving or receiving flying training
- › in an emergency.

You must have passed the flight test with specific competency checks (see CAO 40.2.2 Appendix 1, section 2A) if you intend to carry passengers at night in balloon transport operations.

Conditions

If you hold a balloon grade of night VFR rating, you may fly a balloon at night if the balloon:

- › has at least 2 independent fuel systems
- › takes off not more than 1 hour before first light
- › carries sufficient fuel to enable it to remain airborne until at least 1 hour after first light
- › carries at least 2 torches
- › carries a light that is capable of lighting a sufficient area of ground for the balloon to be landed at night in an emergency.

7.8 General balloon flight crew licensing

Pilot acting in command under supervision (CAR 5.40)

You must not act (and the operator must ensure that you do not act) as a pilot in command under supervision (PICUS) of a balloon, unless you hold either:

- › a CP(B)L
- › a CAR certificate of validation for an overseas balloon authorisation that is equivalent to a CP(B)L
- › a balloon class endorsement including a flight crew rating if required for the activity to fly the balloon as pilot in command.

A co-pilot must not act as a pilot in command under supervision (PICUS) of a balloon unless:

- › they have the permission of the operator
- › the operator has appointed a person who is to be the PIC of the balloon.

Notification of flight tests to CASA (CAR 5.42)

An approved balloon testing officer must ensure they have done the following at least 24 hrs before the planned flight test:

- › sought and obtained a flight test number from CASA
- › notified CASA, of the time, date, place, and nature of the proposed test.

An approved balloon testing officer must ensure that for the flight test they have:

- › entered the flight test number on the flight test form
- › recorded the results on the flight test form
- › sent the test results to CASA within:
 - » 14 days after the day of a passed test
 - » 90 days after the day of a failed test.

CASA may give a written notice to an approved balloon testing officer requiring documents relating to a flight test that are:

- › described in the notice
- › in the officer's possession and control
- › reasonably required by CASA in relation to the test.

An approved balloon testing officer on receiving the notice must send the documents to CASA within:

- › 14 days after the day of a passed test
- › 90 days after the day of a failed test.

Note: A flight test report form means a form issued by CASA for recording the results of flight tests.

Authorisation to test a balloon (CAR 5.50)

CASA may, in writing, authorise you, if you hold a CP(B)L or a CAR certificate of validation of an equivalent CP(B)L overseas balloon authorisation, to perform activities essential to the operation of a balloon where you do not hold a balloon class endorsement, when a flight is for:

- › testing the balloon
- › carrying out an experiment in relation to the balloon.

An authorisation may be made subject to conditions necessary for the safety of air navigation.

CASA may set conditions in the authorisation and you must comply with those conditions.

Personal logbooks (CAR 5.51, CAR 5.52 and 5.53)

If you hold a balloon flight crew licence (or CAR certificate of validation), you must have a suitable logbook to enter crew ratings, class endorsements, other kinds of privileges as required (see CAR 5.52 below) and other matters that CASA may direct to be recorded. You must record in your logbook:

- › your full name, address, date of birth and aviation reference number
- › any information about each flight you undertake that CASA directs be recorded.

You must keep your logbook for as long as you hold a balloon flight crew licence or CAR certificate of validation. You must produce your logbook when required by CASA.

CASA may, in writing, direct the recording of certain matters in a personal logbook but only if it is for the safety of navigation.

When you are given a direction by CASA, you must comply with that direction.

Evidence of identity (CAR 5.54 and 5.54A)

Before a balloon flight crew licence, CAR certificate of validation, crew rating or class endorsement is issued, or an examination conducted by CASA is attempted, CASA may require you to produce evidence of your identity.

Until evidence of identity is provided, CASA may refuse the issue of the licence, certificate, rating endorsement or the attempt of the examination.

CASA may also require you to produce evidence of your identity, if it is in the interest of the safety of air navigation, and there are reasonable grounds for believing that you are about to perform an activity essential to the operation of an Australian balloon.

CASA may direct you not to conduct an activity essential to the operation of an Australian balloon until you have produced evidence of your identity.

You must not refuse to produce evidence of your identity once you have performed an activity essential to the operation of an Australian balloon.

An examiner may require you to produce evidence of your identity before you attempt an examination. The examiner may also refuse to allow an attempt of the examination until evidence has been produced.

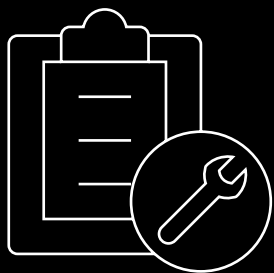
Note: The definition of examination includes flight tests.

Request to produce documents by CASA (CAR 5.56)

CASA may request a balloon flight crew licence or CAR certificate of validation holder to produce their licence, certificate, logbook, and medical certificate for inspection.

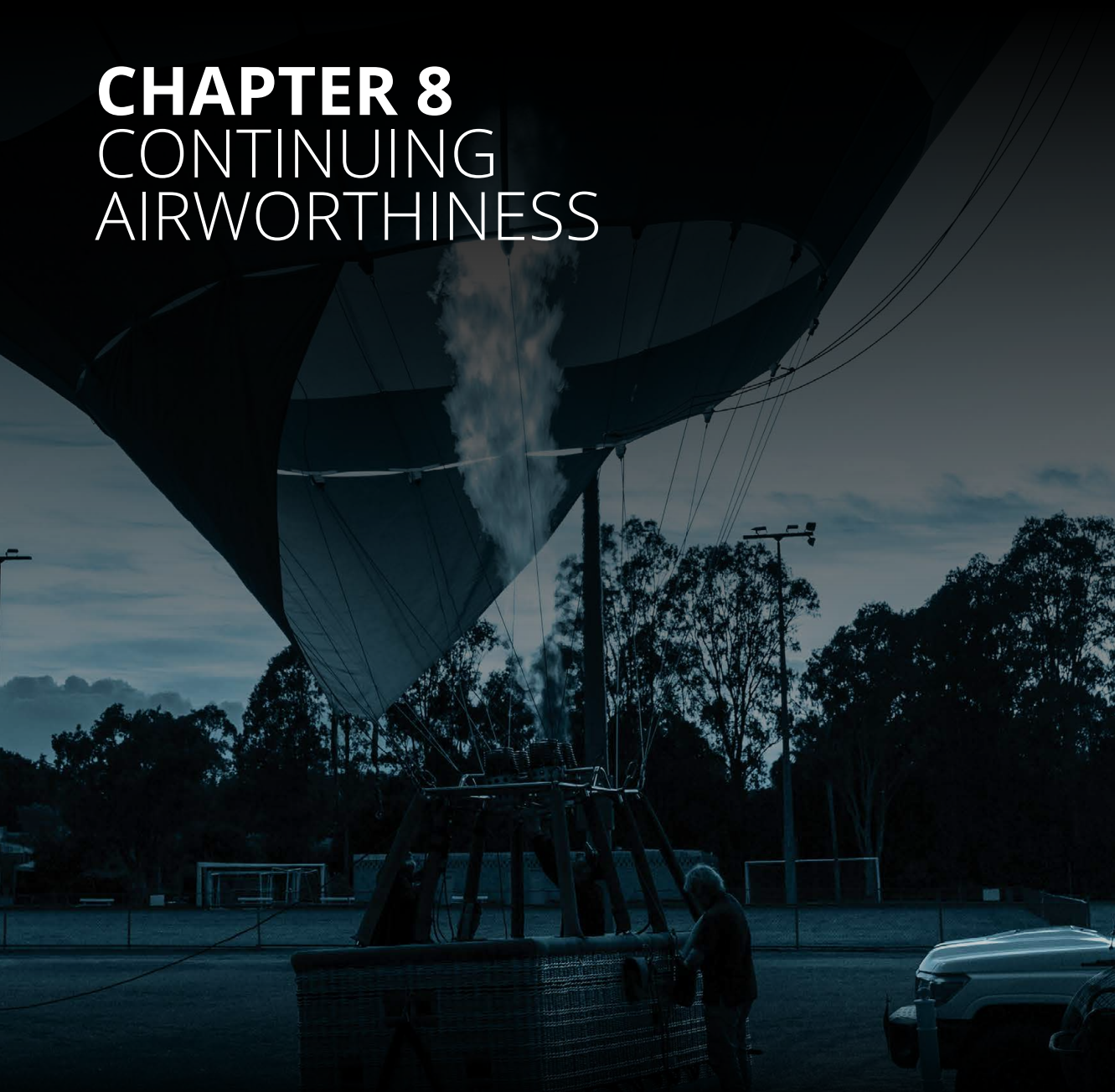
A document requested by CASA must be produced without delay.

If a document is not immediately accessible it may be produced up to 7 days after the day of the request. Where this is the case CASA may specify where the document must be produced.



CHAPTER 8

CONTINUING AIRWORTHINESS



Chapter 8 – Continuing airworthiness

This chapter sets out continuing airworthiness regulations and advisory material for balloons and has been developed from:

- › CAR 1988 and its schedules
- › CAO 100.5 General requirements in respect of maintenance of Australian aircraft
- › AC 131-01 Part 131 Manned, free balloons – continuing airworthiness.



CASR Part 31 sets out the airworthiness standards for crewed, free balloons. It is based on FAA and EASA certification standards and is for designers of crewed free balloons and people who design modifications and repairs. It is not within the scope of this guide.

8.1 Who may carry out maintenance?

Balloon maintenance may be carried out by:

- › a CAR 30 maintenance organisation
- › the holder of an appropriate maintenance authority (MA) issued by CASA
- › the holder of a commercial pilot (balloon) licence or private pilot (balloon) permit valid for the balloon type.

Maintenance organisations (CAR 30, Part 5 of Schedule 7)

A CAR 30 maintenance organisation may carry out maintenance that is covered by their certificate of approval issued by CASA.

The following maintenance must only be carried out by a CAR 30 certificate of approval (COA) holder and not by a pilot or maintenance authority holder outside their employment or arrangements with a CAR 30 maintenance organisation:

- › the replacement of one or more panels in the upper half of the envelope
- › the replacement of 4 or more panels in the lower half of the envelope
- › the repair or replacement of load tape

- › the repair of the suspension system
- › the repair of the burner system, except for seal replacement and jet cleaning
- › the balloon's maintenance release inspection (see below in this chapter).

Maintenance authority holders (MA holders) (CAR 33B, and 42ZC(6))

Maintenance authorities (MAs) are authorisations issued by CASA to enable a qualified and trained person to carry out the types of maintenance listed in the MA. Any conditions that apply will also be written in the MA.

Except for the types of maintenance that must be carried out by an appropriate CAR 30 maintenance organisation (see above), an MA holder may carry out a type of maintenance listed in their authority outside the employment and arrangements with a CAR 30 COA holder. This is usually limited to periodic inspections and minor repairs.

MA holder supervisors to be responsible for work they supervise

Under the employment of or an arrangement with a CAR 30 maintenance organisation, an MA holder may supervise another person employed by the same organisation, performing a type of maintenance permitted under the certificate of approval. Maintenance performed by a person under the supervision of an MA holder is taken to be performed by the person who supervised the maintenance.

Pilot maintenance (CAR 42ZC(4)(db) and Part 2 of schedule 8)

The holder of a commercial or private pilot licence valid for the balloon may carry out the maintenance listed in the table below.

For balloons operated under an Air Operator's Certificate (AOC) the pilot should be assessed as competent to carry out the specified maintenance and be approved by the AOC holder (See figure 19 on the following pages.)



Pilot maintenance may be carried out outside the arrangements of a CAR 30 maintenance organisation.

8.2 Maintenance schedules

(CAR 41 and 42A)

Balloon maintenance schedules describe what maintenance must be carried out and when. The schedules must cover all the balloon's maintenance requirements, including any fitted components.

The Certificate of Registration (CofR) holder for the balloon is responsible for ensuring that either the balloon manufacturer's maintenance schedule or a maintenance schedule approved by CASA is in use before the aircraft is operated. The maintenance schedule for a balloon is specified on the logbook statement page in the aircraft logbook.

Manufacturer's maintenance schedule (CAR 42A)

The manufacturer's maintenance schedule may be used as long as it has not been declared inadequate in writing by CASA. This is the most common maintenance schedule for a balloon in Australia.

CASA may determine that additional requirements must be added to the manufacturer's maintenance schedule. If so, CASA will provide direction on what the additional requirements are. All additional requirements are taken to form part of the balloon's maintenance schedule, and together they are the balloon manufacturer's maintenance schedule.

If there is a modification or repair to the balloon, or a component fitted to it, the designer's instructions for continuing airworthiness for the modification or repair become a part of the manufacturer's maintenance schedule.

Approved system of maintenance (CAR 42C, 42L, and 42M)

As an alternative to a manufacturer's maintenance schedule, a CofR holder for a balloon may elect to use an approved system of maintenance (SOM) as the balloon's approved maintenance schedule.

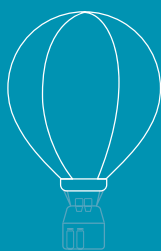
As the operator you are responsible for developing the SOM and to ensure that the SOM is approved by CASA, or an authorised person, and must include the items in the table 24.

Table 24: What must be included in a system of maintenance (SOM)

Requirements	
<input checked="" type="checkbox"/>	a statement setting out the name of the CofR holder for the balloon, the balloon type, model, and registration
<input checked="" type="checkbox"/>	a schedule setting out what regular maintenance inspections, tests and checks are to be carried out and when
<input checked="" type="checkbox"/>	a schedule that sets out the inspections to be carried out on the balloon if it has been struck by lightning and when that inspection is to be carried out
<input checked="" type="checkbox"/>	a schedule that sets out the inspection to be carried out on the balloon if abnormal flight or ground loads have been imposed on the balloon
<input checked="" type="checkbox"/>	a schedule that sets out the time-lifed components included in the balloon and when each of those components is to be retired, overhauled, or removed
<input checked="" type="checkbox"/>	a nomination of a maintenance inspection that is to be carried for the purposes of determining whether a maintenance release should be issued for the balloon
<input checked="" type="checkbox"/>	a list of permissible unserviceabilities in the form of minimum equipment list (MEL)
<input checked="" type="checkbox"/>	procedures to be followed in carrying out inspections



A CofR holder for a balloon may engage an authorised person to develop and approve a SOM for them.

Figure 20: Maintenance that may be carried out by a pilot

Envelope

- ☑ replacing envelope temperature flags (but not including replacing temperature tell-tale tags)
- ☑ removing or installing envelope temperature probes
- ☑ adhesive patch repairs on envelope fabric in accordance with the manufacturer's directions for such repairs
- ☑ minor sewn fabric repairs below the first horizontal load tape as permitted by the manufacturer's maintenance manual
- ☑ adjusting, replacing, or repairing control lines other than deflation lines
- ☑ removing or installing karabiners
- ☑ removing or installing the crown line
- ☑ removing or installing scoops and skirts.



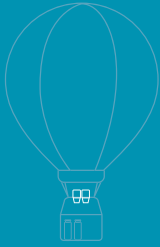
Basket

- ☑ interchanging or replacing basket in accordance with balloon operating handbook or other acceptable data
- ☑ minor repairs to basket trim materials
- ☑ re-varnishing or re-oiling basket wicker
- ☑ removing or installing fire extinguishers
- ☑ removing or installing burner poles
- ☑ removing or installing the handling line and container
- ☑ removing or installing storage pouches.



Fuel cylinders

- ☑ replacing or lubricating fuel cylinder tank inlet or outlet O-rings
- ☑ removing or replacing fuel cylinder straps
- ☑ replacing fuel cylinder contents gauge glasses held in by screws (but not including replacing the whole contents gauge assembly)
- ☑ repairing or installing cylinder jackets
- ☑ removing or installing heater pads
- ☑ interchanging or replacing fuel cylinder if the cylinder is designated as interchangeable in balloon operating handbook or other acceptable data
- ☑ adjusting LPG vapour regulators if the adjustment does not involve disassembly of regulator.



Burner systems

- ☑ cleaning liquid pilot light regulators
- ☑ cleaning or replacing seals in hose couplings
- ☑ removing, cleaning, or installing pilot light or burner jets, including filters
- ☑ tightening burner parts, including heat shields
- ☑ lubricating (not requiring disassembly other than removing lubrication port blanks)
- ☑ removing, replacing, or adjusting the piezo igniter system
- ☑ adjusting liquid fire (whisper) or pilot light valves
- ☑ removing or installing the burner in accordance with balloon operating handbook or other acceptable data.



Burner frame

- ☑ removing or installing burner frame heat shields
- ☑ adjusting burner gimbal friction.



Instruments and radios

- ☑ replacing batteries
- ☑ changing instrument packs
- ☑ removing or installing radios if:
 - » no disturbance is required to the balloon's instruments or electrical wiring
 - » there is no need to disassemble a primary structure of the balloon.



Other equipment

- ☑ removing or replacing other equipment if:
 - » no modifications are required to the balloon's instruments or electrical wiring;
 - » there is no need to disassemble a primary structure of the balloon
- ☑ removing, replacing, or adjusting non-structural standard fasteners incidental to operations.

8.3 Maintenance records

(CAR 50A and 50B and CAO 100.5)

The CofR holder for a balloon must keep maintenance records and airworthiness documents in a logbook for the balloon.

A balloon logbook must contain the details in the table below.

Table 25: Balloon logbook requirements

Requirements	
<input checked="" type="checkbox"/>	identify the balloon and the type and model of the burner system
<input checked="" type="checkbox"/>	identify the balloon's maintenance schedule
<input checked="" type="checkbox"/>	identify any approved variations or exemptions to the balloon's maintenance schedule
<input checked="" type="checkbox"/>	have provision for the recording and certification of maintenance carried out on the balloon
<input checked="" type="checkbox"/>	contain a record of when any time-lifed components were installed or removed, including a record of the date and balloon time-in-service of the installation or removal
<input checked="" type="checkbox"/>	contain a record of compliance with all applicable airworthiness directives, including a record of the date and time-in-service of the compliance
<input checked="" type="checkbox"/>	contain a summary of any changes to the empty weight of the balloon
<input checked="" type="checkbox"/>	have all logbook sections incorporating certification pages sequentially numbered, and bound or held together in a way that protects each page from inadvertent misplacement, loss or removal

You do not need specific approval for your logbook if it meets these requirements, but it must be made available to CASA on request.



CASA developed logbook sections that meet the above requirements can be ordered from the CASA [online store](#).

A CofR holder for a balloon may request CASA to approve an alternative to the kind of logbook (or particular logbook section).

Following written confirmation of approval from CASA, an alternative balloon logbook must be made available in an easily accessible and useable format to the following:

- › each person engaged in maintenance on the balloon
- › CASA at any time on request.

A computer-based balloon logbook that covers all the requirements of Table 25 can be used as an alternative balloon logbook. However, all parts of the computer-based logbook that contain maintenance certifications or maintenance records must be managed with a secure system that ensures:

- › pages are ordered sequentially or in a chronological order
- › protection against inadvertent deletion, alteration, or erasure
- › any intended deletion, alteration, or erasure can be traced through the system to identify the user who carried out the action.

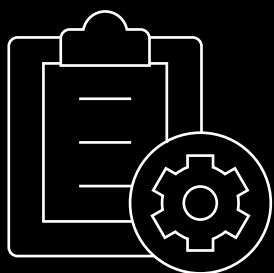
8.4 General requirements for maintenance certification

(CAR 42ZE)

A person who carries out maintenance on a balloon must ensure the completion of the maintenance is certified under either:

- › the CASA system of certification for completion of maintenance
- › an approved alternative system.

A person must only certify for the completion of maintenance on a balloon, or a balloon component, if the maintenance has been completed in line with the approved maintenance data for the balloon or component.



CHAPTER 9

ADMINISTRATIVE RULES



Chapter 9 – Administrative rules

This chapter details the requirements for the operation of an Australian aircraft outside Australian airspace, a foreign aircraft in Australian territory and the certificates and permission required of balloons and hot air airships in certain circumstances e.g. provisionally certified aircraft and experimental aircraft.

9.1 Operating an Australian aircraft outside Australia

(91.010 and 91.015)

When operating an aircraft in a foreign country, both Part 91 and the aviation laws of the foreign country apply. Where there is an inconsistency, you must comply with the relevant law of the foreign country.

When operating an aircraft over the high seas, both Part 91 and Annex 2 to the Chicago Convention apply. Where there is an inconsistency, you must comply with the relevant Annex 2 standard.



Australia is substantially ICAO compliant and aviation law around the world is becoming more standardised. However, there are notable differences between some countries – for example in the use of metric units for the height of the transition level. AMC/GM Part 91 (91.140) illustrates the differences between Annex 2 and Part 91, and also defines the term ‘high seas’.



9.2 Operating foreign-registered aircraft in Australian territory

Part 91 applies to foreign-registered aircraft when they are operating in Australian territory, with the exception of:

- › Division 91.C.3 – Flight related documents
- › Subpart 91.P – Cabin crew
- › Subpart 91.T – Operations under certain special certificates of airworthiness and special flight permits (91.020).

Maximum period for use of foreign registered Part 131 aircraft in Australian territory (131.240)

An AOC holder must not operate a foreign registered balloon in any 12-month period for more than either:

- › 90 days
- › the total days given in your 131.035 approval.

Foreign registered aircraft – Chicago Convention (91.965)

When operating a foreign registered aircraft in Australian territory the PIC and the operator must comply with the Chicago Convention relating to:

- › the nationality and registration marks of the aircraft
- › the aircraft's certificate of airworthiness
- › the crew member licences and ratings
- › the documents to be carried
- › the flight type and manoeuvres
- › the radio equipment.

Note: The Chicago Convention applies to aircraft with a standard certificate of airworthiness. Foreign aircraft with the equivalent of a special certificate of airworthiness, or a special flight permit, require a special flight permit to be flown in Australian territory.

Foreign registered aircraft – special flight authorisations (91.970)

A person may apply to CASA for a special flight authorisation to fly a foreign registered aircraft in Australian territory without a certificate of airworthiness. The pilot must comply with any conditions of the special flight authorisation.

Foreign registered aircraft – major defect – CASA directions (91.980, 91.985, 91.990 and 91.995)

For reasons of safety, or if requested by a contracting state's national aviation authority, CASA may issue a written direction imposing conditions on an aircraft that has a major defect. These directions must be complied with.

CASA must give the national aviation authority of the contracting state:

- › notice in writing of the action taken
- › a copy of the direction
- › a written report of the defect.

CASA may revoke the direction if satisfied there is no adverse impact on safety and the national aviation authority of the contracting state informs CASA in writing that:

- › it has revoked any suspension of the certificate of airworthiness
- › the aircraft now fulfils the minimum safety requirements
- › the aircraft should be permitted to fly to a place for repairs with only crew members on board.

A direction or the revocation does not have effect until it has been either:

- › served on a person
- › affixed to the relevant aircraft.

9.3 Special certificates and permits

Aircraft with more than one certificate of airworthiness – application of Subpart 91.T (91.835)

If a certificate of airworthiness has been issued in more than one category for the aircraft, it may only be flown under one category under Subpart 91.T at any one time.



Refer to AC 21-1 Aircraft Airworthiness Certification Categories and Designations Explained for detailed information on aircraft airworthiness certification and operational classifications.

Provisionally certificated aircraft

Provisionally certificated aircraft – operating requirements (91.850)

Where a provisional certificate of airworthiness has been issued for the aircraft, before flight, the PIC and the operator must ensure the following requirements are met:

- › the certificate is in force
- › any condition or requirement on the certificate is met
- › the flight is not a balloon transport operation
- › the flight is of a kind listed in regulation 91.855 (see below in this section)
- › unless the aircraft is being flown to obtain type certification or supplemental type certification (operations for type certificate or supplemental type certificate [91.860 – see below in this section]), you must fly within the limitations stated in the aircraft flight manual
- › the requirements for the carriage of people under 91.865 are met (see below in this section)
- › for the pilot, the procedures associated with any approval issued to the operator under 91.870 (see below in this section) are met.

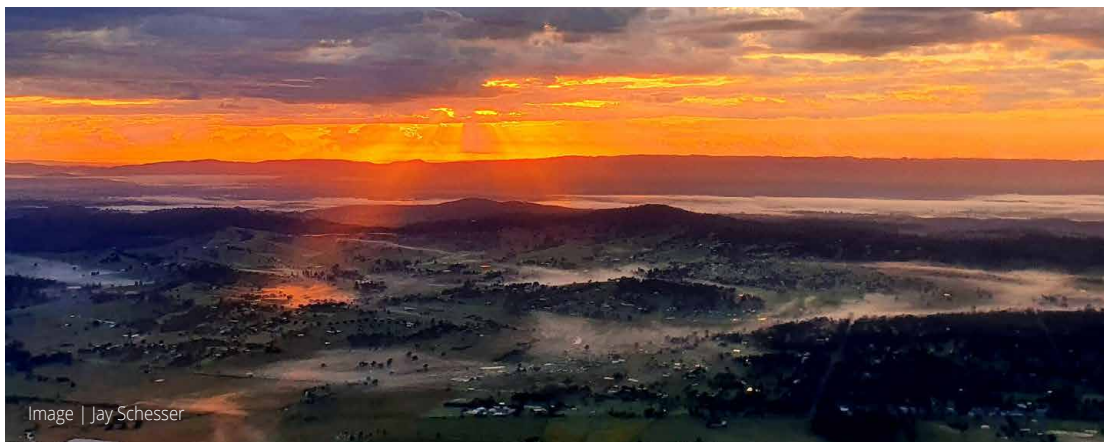


Image | Jay Schesser

Provisionally certificated aircraft – kinds of operations permitted (91.855)

The kinds of operation referred to in 91.850 (above in this section) in a provisionally certified aircraft are:

- › those required to obtain type certification, or supplemental type certification
- › training flight crew, including simulated air transport operations
- › a demonstration flight by the aircraft's manufacturer for prospective purchasers
- › a market survey operation by the aircraft's manufacturer
- › a flight to check instruments, accessories and items of equipment that do not affect the aircraft's airworthiness
- › service testing of the aircraft.

Provisionally certificated aircraft – operation for type certification or supplemental type certification (91.860)

For a provisionally certified aircraft being flown to obtain type certification or supplemental type certification referred to in 91.850:

- › if the aircraft's certificate is subject to a condition limiting the area within which the aircraft may be flown, the flight must not take place outside, or partly outside, that area unless the holder of the certificate holds an approval from CASA or an authorised person or
- › if the flight is over a populous area, the holder of the certificate must hold an approval from CASA or an authorised person and

- › the flight must be under the VFR by day, or the holder of the certificate must hold an approval from CASA or an authorised person.

For an approval to be issued by CASA or an authorised person they must be satisfied that the aircraft is controllable throughout its normal range of speeds and throughout all manoeuvres to be executed and has no hazardous operating characteristics or design features.

Provisionally certificated aircraft – requirements for the carriage of people (91.865)

A person referred to in 91.850 (see above in this section) may only be carried if they have been notified before they board the aircraft that the aircraft is provisionally certified and either:

- › they have a function in the aircraft's operation
- › both the manufacturer has authorised the carriage of each person, and the holder of the provisional certificate holds an approval for carrying persons from CASA or an authorised person.

Provisionally certificated aircraft – additional requirements for operators (91.870)

The operator of a provisionally certified aircraft must hold an approval from CASA, or an authorised person, for procedures for use by flight crew and personnel who carry out a ground support duty in both:

- › operating the aircraft
- › landing at and taking off from an aerodrome if take-off or approach over a populous area is necessary.

Experimental aircraft

Experimental aircraft – operating requirements (91.875) (CASA EX 81/21)

'Experimental' is a designation and not a category. It is also important to note that an experimental certificate does not attest to an aircraft being airworthy.

The experimental certificate system allows any person or commercial concern to construct an aircraft of any size and seating capacity, and with any number and type of engines.

Experimental certificates can be issued for one or more of a number of specific recognised purposes.

Where an experimental certificate has been issued for the aircraft, before flight, the PIC and the operator must ensure that:

- › the certificate has been issued and is in force
- › any certificate conditions or requirements can be complied with
- › the flight is not an air transport operation or a balloon transport operation
- › the flight is either:
 - » for a purpose mentioned in regulation 21.191 for which the certificate was issued
 - » a kind of operation permitted in 91.880
- › the flight must be under the VFR by day, or the holder of the certificate must hold an approval from CASA or an authorised person
- › if a flight is over a built-up area of a city or town, the holder of the certificate must hold an approval from CASA or an authorised person
- › if the flight is over a public gathering, the holder of the certificate must only pass over the public gathering when arriving or departing an aerodrome or transiting in the normal course of navigation (EX 81/21)
- › if the aircraft's experimental certificate is subject to a condition limiting the area within which the aircraft may be flown, the flight must remain within that area
- › if the aircraft is carrying a passenger:
 - » the total number of persons on board must not exceed that allowed under 91.885 (see below in this chapter)
 - » each passenger must be notified before boarding that the design, manufacture and airworthiness of the aircraft are not required to meet any standards recognised by CASA
 - » a placard complying with the MOS requirements must be displayed inside the aircraft (see Figure 19 below)
- › if the aircraft is carrying a person who is not a crew member, whose presence is essential to the operation of the aircraft, it must have been shown that the aircraft:
 - » is controllable throughout its normal range of speeds and throughout all manoeuvres to be executed
 - » has no hazardous operating characteristics or design features.



An experimental aircraft certificate may be issued for:

- › research and development
- › showing compliance with the regulations
- › training an applicant's flight crew
- › exhibition
- › air racing
- › market surveys
- › operating amateur-built aircraft
- › operating kit-built aircraft
- › private operation of prototype aircraft previously certified under regulation 21.191 (a) (b) or (d)
- › operating a light sport aircraft that either:
 - » has been assembled from a kit for which the applicant can provide the information required in regulation 21.193 (e)
 - » has been assembled from the kit manufacturer's instructions
 - » is the same make and model as a production aircraft covered under regulation 21.186
- › operating a light sport aircraft covered by regulation 21.186, for which a special certificate of airworthiness or another document of similar effect under the law of an ICAO contracting state has been issued.



Refer to AC 21-10 Experimental certificates for detailed guidance.

**Experimental aircraft – placards
(Part 91 and MOS 27.01)**

The following placard must be displayed inside an experimental aircraft in full view of the passengers.

Figure 21: Warning placard



Exception: For aircraft flown before 1 December 1999 the MOS 27.01 placard requirement (above) is satisfied if the following text is displayed in full view of all passengers.

Figure 22: Warning placard



Experimental aircraft – kinds of operations permitted (91.880)

The kinds of operation permitted in an experimental aircraft are:

- › taking the aircraft to a place for maintenance
- › taking the aircraft from a place where maintenance has been done
- › testing the aircraft after maintenance
- › flying training (other than for issuing a pilot licence)
- › practice in flying the aircraft
- › demonstrating or testing the aircraft for sale
- › delivering the aircraft to a person under a contract of sale
- › for an amateur-built aircraft or a kit-built aircraft – flying training given to the aircraft's owner
- › for an experimental aircraft subsequently approved for glider towing by the Gliding Federation of Australia Inc, ARN 217932 (the GFA), glider towing, provided the operator is a member of the GFA and complies with the GFA memberships rules for glider towing EX81/21.



Operations may be conducted under an experimental certificate for a range of reasons. Generally, this regulation requires the experimental certificate operation to occur for either the purposes listed in Part 21, or the additional supporting purposes listed under this Part 91 regulation.

Additional information relating to experimental certificates can be found in AC 21-10 Experimental certificates.

Experimental aircraft – maximum number of persons to be carried (91.885)

The maximum number of persons that may be carried on an experimental aircraft is either:

- › the number specified in any approval
- › the lesser of the number of persons the aircraft was designed to carry or 6 persons.

Light sport aircraft (LSA)

Light sport aircraft – operators (91.895)

A light sport aircraft (LSA) operator must not operate the aircraft unless a special certificate of airworthiness has been issued and is in force.



A balloon can be classified as an LSA if:

- › the aircraft is a lighter-than-air aircraft with a maximum gross weight of 560 kilograms or less
- › the aircraft is a crewed, free balloon that is not designed to be equipped with seating, the aircraft can carry no more than two persons.



Refer to AC 21-41 Light Sport Aircraft Certificate of Airworthiness and AC 21-42 Light Sport Aircraft Manufacturers' Requirements for detailed guidance.

Light sport aircraft – pilots (91.900)

An LSA may only be operated provided it has a special certificate of airworthiness which is in force and it is operated either:

- › solely under Part 91 or Part 103
- › for flying training.

A placard which complies with the MOS must be displayed inside the aircraft so that each person who boards the aircraft is notified of the contents of the placard.

The aircraft operating instructions, including the necessary equipment listed by the manufacturer, and any safety direction or requirement issued by the manufacturer must be complied with.

Exception: The aircraft's manufacturer may approve operation of the aircraft in contravention of the instruction, directions or requirement above.

Exception: If the manufacturer of the aircraft no longer exists or can no longer provide instructions for the continuing airworthiness of the aircraft, references to the 'manufacturer of the aircraft' include references to a person appointed by CASA to perform the functions of the manufacturer in relation to the continuing airworthiness of the aircraft.

Light sport aircraft – placards (Part 91 MOS 27.02)

When carrying passengers in an LSA the following placard must be displayed in their full view.

Figure 23: LSA required placard

**THIS AIRCRAFT WAS
MANUFACTURED IN
ACCORDANCE WITH
LIGHT SPORT AIRCRAFT
AIRWORTHINESS
STANDARDS AND DOES NOT
CONFORM TO STANDARD
CATEGORY AIRWORTHINESS
REQUIREMENTS.**



Image | Jay Schesser

Flights under special flight permits (91.905)

The PIC may only fly an aircraft with a special flight permit that authorises the flight and must comply with the conditions on the permit.

If the PIC is the only person on the aircraft, the PIC must carry a copy of the permit on the aircraft.

If an additional person is carried, the PIC and the operator must ensure a copy of the permit is displayed where the person will see it. In addition, before boarding, a person must also be informed:

- › that the aircraft is being operated under a special flight permit
- › the reasons for the issue of the permit
- › what the permit authorises.



A special flight permit may be issued under Part 21 to allow an aircraft to be flown for the purpose of:

- › maintenance or storage
- › delivery or export.

Special certificate of airworthiness

Special certificate of airworthiness – application (91.910)

The following regulations (91.915 and 91.920) apply to the operation of an aircraft for which a special certificate of airworthiness is in force.

A special certificate of airworthiness may be issued in the following categories:

- › primary
- › intermediate
- › restricted
- › limited
- › amateur-built under an-amateur built aircraft acceptance (ABAA).



Refer to AC 21-01 Aircraft airworthiness certification categories and designations explained for detailed guidance.

Aircraft with special certificates of airworthiness – maintenance release (91.915)

The PIC or the operator must not allow a flight to begin unless a maintenance release or a certificate of release to service for the aircraft is in force.

Exception: *This regulation does not apply to an aircraft for which a special flight permit is in force.*

Aircraft with special certificates of airworthiness – flight tests to be conducted in certain areas (91.920)

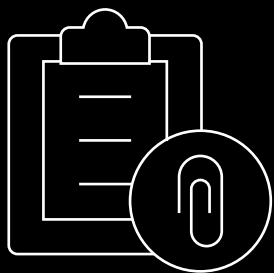
A flight test of an aircraft is only permitted over:

- › open water
- › a sparsely populated area
- › an unpopulated area
- › an area where, in the event of a loss of control of the aircraft, there would be minimal risk to other air traffic.

In addition, for an amateur-built aircraft, a flight test can only be over and in an area for which the holder of the certificate of airworthiness holds an approval from CASA or an authorised person.



Refer to AC 21-47 Flight test safety for additional information relating to flight tests.



APPENDICES



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Only those regulations contained within the guide are included below.

See also Appendix B and C for rules disappplied and not applicable.

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Regulation number	Regulation title
Division 91.C.3 91.100/105/110/115/120	Flight related documents
91.190	Dropping things from aircraft
Division 91.D.2 91.230/235	Flight preparation
Division 91.D.3 91.240/245	Flight notifications and pre-flight checks
91.255	Air traffic services – prescribed requirements
91.265	Minimum height rules – populous areas and public gatherings
91.267	Minimum height rules – other areas
Subdivision 91.D.4.2 and 91.D.4.3 91.273/275/277/280/283/285 91.287/290/295/300/305/307/310/315/320	Visual flight rules Instrument flight rules
91.335	Additional right-of-way rules
91.355	Giving way on water
Subdivision 91.D.4.6 (other than: 91.360 Meaning of in the vicinity of a non-controlled aerodrome) 91.365/370/375/380/385/390/395/400/405	Avoiding collisions at or in the vicinity of aerodromes
91.455	Fuel requirements
91.480	Fuelling aircraft – electrical bonding
91.510	Fuelling aircraft – persons on aircraft, boarding or disembarking
91.515	Fuelling aircraft if fuel vapour detected
Division 91.D.7, (other than: 91.520 Crew members to be fit for duty; 91.525 Offensive or disorderly behaviour on aircraft; 91.600 Carriage of cargo – general; 91.620 Carriage of animals) 91.530/535/540/545/550/555/560/565/570/575/580/585/590/595/605/610/615	Safety of persons on aircraft and cargo requirements
91.630	Use of radio – broadcasts and reports
91.725	Training flight limitations etc.
Subpart 91.F 91.795/800	Performance
Subpart 91.J 91.805	Weight and balance
Subpart 91.K 91.810	Equipment
Subpart 91.P 91.820/825/830	Cabin crew

Appendix C List of Part 91 rules not applicable but not disapplied

	Regulation
Application of Part 91 – foreign state aircraft	91.025
Application of Part 91 – certain provisions of this Part do not apply if Parts 105, 121, 133, 135 or 138 apply	91.035
NVIS flights	91.085
All flights airspeed limits	91.090
Conducting aerobatic manoeuvres	91.185
Towing of things by aircraft	91.210
Flying in formation	91.205
Compliance with international regulations	91.345
Taxiing aircraft	91.415
Safety when aeroplane operating on ground	91.425
Safety when rotorcraft operating on ground	91.430
Oil requirements	91.460
Fuelling turbine engine aircraft – low risk electronic devices	91.490
Only turbine engine aircraft to be hot fuelled	91.495
Hot fuelling aircraft – general	91.500
Hot fuelling aircraft – procedures etc.	91.505
Availability of instructions for flight data and combination recorders	91.645
Flight recorders – preserving recordings of immediately reportable matters	91.650
RVSM airspace	91.655
PBN flights	91.660
Multi engine aircraft – pilot in command to land at nearest suitable aerodrome if emergency occurs	91.685
Flight in icing conditions – adherence of frost, ice or snow	91.705
Flight in icing conditions – requirements for flight	91.710
Simulating IMC flying	91.720
Aeroplane flights in IMC or at night – engine not to be shut down	91.730
Single engine aeroplane – VFR flights by day – engine not to be shut down	91.735
Single engine aeroplane – simulating engine failure in IMC or at night	91.740
Multi engine aeroplane – simulating engine failure – general	91.745
Multi engine aeroplane – simulating engine failures in IMC or at night	91.750
Single engine rotorcraft – engine not to be shut down	91.755
Single engine rotorcraft – engine failure not to be simulated and autorotation of main rotor system not to be initiated in IMC	91.760
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	Regulation
Multi engine rotorcraft – engine not to be shut down at certain altitudes in IMC or at night	91.770
Multi engine rotorcraft – simulating engine failure in IMC or at night	91.775
Restricted category aircraft – general operating requirements	91.840
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Approval of extensions of rectification intervals	91.945
Effect of approval	91.950
CASA to be notified of extensions approved by a continuing airworthiness management organisation	91.955
Operation of aircraft with multiple inoperative items not permitted in certain circumstances	91.960
Foreign state aircraft—approval to fly in Australian territory	91.975

Appendix D Training syllabuses

The syllabus content in this appendix applies to those operators conducting balloon transport operations.

1.1 Exposition requirements

(MOS 27.14 and 28.05)

A balloon transport operator's exposition must contain:

- › procedures to be followed to ensure that the requirements of this appendix are met
- › details of the content and duration of the training provided to ensure that each ground support person is trained to be competent to undertake their duties and responsibilities under the civil aviation legislation
- › details of the content and duration of the training provided to ensure that each pilot is trained to be competent to undertake their duties and responsibilities under the civil aviation legislation.

1.2 Training and checking of flight crew members

Persons permitted to conduct training and checking (MOS 27.12)

The relevant training of a balloon transport operation must be conducted and assessed by either:

- › the operator's head of flying operations (HOFO)
- › an individual who is authorised by Part 5 of CAR to conduct a balloon flight review.

The HOFO must satisfy the requirements to perform a training or a competency assessment role, as set out in the operator's exposition.

Note: Relevant training refers to:

- › general emergency training
- › general emergency competency checks
- › operator proficiency checks
- › transition training.

Emergency training and competency

Training requirements (MOS 27.09)

A pilot must receive the following training from an approved trainer prior to acting as a pilot in a balloon transport operation:

- › the operator's general emergency procedures
- › the procedures for dealing with the following emergency situations:
 - » fire in the air or on the ground, including how to use any fire extinguishers carried on the aircraft and on any support vehicles
 - » a flammable gas leak while the aircraft is in the air or on the ground
 - » contact between the aircraft and a powerline
 - » emergency evacuation from the launch field or the balloon basket
 - » ditching in water if operations are planned or likely to traverse any body of water, such as a lake, a bay or an estuary, at a horizontal distance of more than 1 km from the shore for longer than 5 minutes before being again over land
 - » the aircraft landing in trees
 - » preparation for, and the handling of, a hard landing
 - » emergency landing, whether with or without ground support personnel
 - » SAR procedures
- › locating, accessing, and using the emergency equipment and survival equipment on the aircraft
- › the actions to be taken in the event of an emergency relating to the operation of an inflation fan.

Competency check requirements (MOS 27.09)

Prior to acting as a pilot in a balloon transport operation, a pilot must successfully complete a competency check on all items detailed above in this section.

The competency check must be conducted by an approved check person.

Recurrent training and checking requirements (MOS 27.11)

Pilots of a balloon transport operator must complete recurrent training and checking in emergency procedures at intervals of not more than 24 months after the date of their first general emergency check.

The recurrent check may be completed within the 90 days before or after the due date and is deemed to have been complete on the due date.

For example, if your initial competency check was undertaken on 20 May 2022, your certificate of competency expires on 20 May 2024. You can therefore undertake recurrent competency check anytime in the 90 days prior to or after the 20 May 2024 to extend your validity to 20 May 2026.

Transition training to act as the pilot in command without supervision (MOS 27.10 and 27.12)

Until deemed competent by an operator proficiency check (as detailed in this section) pilots conducting balloon transport operations must be supervised by either:

- › the operator's head of flying operations (HOFO)
- › an individual who is authorised by Part 5 of CAR to conduct a balloon flight review.
- › Prior to undertaking the proficiency check, pilots must be trained in the following:
 - › the duties and responsibilities of a pilot for the operator
 - › the procedures relating to the operator's operations
 - › the normal and emergency procedures for the aircraft used for the flight, other than those already included in the operator's emergency training (See section 1.2 of this appendix.)

- › the conduct of a passenger briefing and safety demonstration for the aircraft being used for the flight.

Upon successful completion of the operator proficiency check, the pilot may act as the pilot in command without supervision.

1.3 Training and checking of ground support personnel

Persons permitted to conduct training and checking (MOS 28.03)

The relevant training of a balloon transport operator's ground support personnel must be conducted and assessed by either of the following:

- › the operator's head of flying operations (HOFO)
- › an individual who is authorised by Part 5 of CAR to conduct a balloon flight review
- › a person appointed by the operator to conduct training and checking of ground support personnel.

The HOFO must satisfy the requirements to perform a training or a competency assessment role, as set out in the operator's exposition.

Note: Relevant training refers to:

- › the induction training required
- › the check of competency.

Ground support personnel requiring training (MOS 28.01)

Each member of a balloon transport operator's ground support personnel who is operational safety-critical personnel for a flight must undertake the training and checking detailed in this appendix.

Note: Operational safety-critical personnel are persons performing or responsible for safety-related work, including those employees performing roles that have direct contact with the physical operation and maintenance of the aircraft or with those who have operational contact with personnel who operate the aircraft.

Training requirements (MOS 28.02 and 28.03)

Until deemed competent (as detailed in this section and 1.3.4 of this appendix) ground support personnel of a balloon transport operation must be supervised by one of the following:

- › the operator's head of flying operations (HOFO)
- › an individual who is authorised by Part 5 of CAR to conduct a balloon flight review
- › a person appointed by the operator to conduct training and checking of ground support personnel.

Ground support personnel must receive induction training from an approved trainer prior to acting without direct supervision. The induction training requirements must be detailed in the operator's exposition.

Competency check requirements (MOS 28.02 and 28.03)

Until deemed competent (as detailed in this section and 1.3.3 of this appendix) ground support personnel of a balloon transport operation must be supervised by one of the following:

- › the operator's head of flying operations (HOFO)
- › an individual who is authorised by Part 5 of CAR to conduct a balloon flight review
- › a person appointed by the operator to conduct training and checking of ground support personnel.

Ground support personnel must have successfully completed a check of competency in the execution of normal and emergency procedures that are set out in the operator's exposition.

Ground support personnel cannot act without direct supervision unless the check of competency was successfully completed within the preceding 24 months.

Records of ground support personnel competency (MOS 28.02)

The operator must retain a record of the names of the ground support personnel who have undertaken the check of proficiency detailed in this appendix and the date and results of all checks. These records must be retained whilst the person is employed and for 12 months after they cease employment with the operator.

Appendix E Abbreviations and acronyms

Term	Meaning
AAI	authorised aeronautical information
ABF	Australian Ballooning Federation Inc.
Act	Civil Aviation Act 1988
ADS-B	automatic dependent surveillance–broadcast
AFM	aircraft flight manual (instructions)
AGL	above ground level
AIP	Aeronautical Information Publication published by Airservices Australia and includes the AIP Supplement. Comment: The AIP is available through www.airservicesaustralia.com .
AMSL	above mean sea level
AMSA	Australian Maritime Safety Authority
AOC	air operator's certificate
ASAO	approved self-administering organisation
ASIC	aviation security identification document
AS/NZS	Australian and New Zealand Standard
ATIS	automatic terminal information service
ATC	air traffic control
ATS	air traffic services
ATSB	Australian Transport Safety Bureau
AVID	aviation identification
CAO	Civil Aviation Order
CAR	Civil Aviation Regulations 1988
CASR	Civil Aviation Safety Regulations 1998
CofR	Certificate of Registration
CP(B)L	Commercial pilot (balloon) licence, issued by CASA
CTA	controlled airspace
CTAF	common traffic advisory frequency
DAH	Designated Airspace Handbook, published by Airservices Australia as part of the AIP
EASA	European Aviation Safety Agency
ERSA	En Route Supplement Australia
FAA	Federal Aviation Administration (of the United States)
FCM	flight crew member
FIR	flight information region
FL	flight level
ft	feet
hPa	hectopascals

Term	Meaning
IFR	instrument flight rules
IMC	instrument meteorological conditions
IRM	immediately reportable matter
ISA	international standard atmosphere
km	kilometres
kts	knots
LSA	light sport aircraft
m	metres
MA	maintenance authority
MBA	mandatory broadcast area
MEL	minimum equipment list
MOS	manual of standards
MSL	mean sea level
NAA	national aviation authority
NM	nautical miles
NOTAM	notice to airmen
PIC	pilot in command
PICUS	pilot in command under supervision
SAR	search and rescue
SARTIME	search and rescue time
SFIS	Surveillance Flight Information Service
TAF	terminal area forecast
TSO	technical standard order of the FAA
VFR	visual flight rules
VHF	very high frequency
VMC	visual meteorological conditions

Appendix F Definitions

Term	Meaning
adult	a person who has turned 13 years of age
air display	organised flying performed before a public gathering, including the following: <ul style="list-style-type: none"> › a contest › an exhibition of aerobatic manoeuvres › flying in formation › other aircraft operations associated with the air display
aircraft (Part 131 aircraft)	a crewed, free balloon or a hot air airship
airship	a powered, lighter-than-air aircraft
approval	an approval provided in writing by CASA under Part 131.035 or Part 91.045 <i>For a foreign-registered aircraft operating in Australian territory, approval means that given under the laws of the state of the registry of the operator of the aircraft. Contact your closest CASA regional office for guidance on approvals. See the CASA website for regional office contact details.</i>
approved maintenance data	data relating to how maintenance on aircraft, aircraft components or aircraft materials is to be carried out. This may be issued by the manufacturer, a modification designer, or be other instructions approved by CASA.
approved maintenance organisation	for the purpose of this guide, the holder of a certificate of approval issued under regulation 30 of the Civil Aviation Regulations 1988 (CAR)
approved person	a person approved by CASA
Australian aircraft	is defined by the Civil Aviation Act 1988 (the Act) as: <ul style="list-style-type: none"> › aircraft registered in Australia › aircraft in Australian territory, other than foreign registered aircraft and state aircraft i.e. aircraft not registered with CASA and include those aircraft registered with an applicable Approved Self-Administering Organisation (ASAO)
authorisation	a Part 131 pilot authorisation, which includes: <ul style="list-style-type: none"> › a commercial pilot (balloon) licence or › a CAR certificate of validation or › an authorisation from a Part 131 Approved Self-Administering Organisation (ASAO) that permits the holder to operate a Part 131 aircraft
balloon	an unpowered, lighter-than-air aircraft
balloon component	the basket or gondola, burner, and any other associated aeronautical components of the aircraft (including fuel tanks)
balloon flying training	any training given to a person during flight time in a balloon for the purpose of increasing the person's skill in flying the balloon, including balloon flying training: <ul style="list-style-type: none"> › for a prescribed purpose under paragraph 206 (a) of CAR, conducted in accordance with Part 5 of CAR or › that is a Part 131 recreational activity
carried	for equipment on an aircraft means fitted to or carried

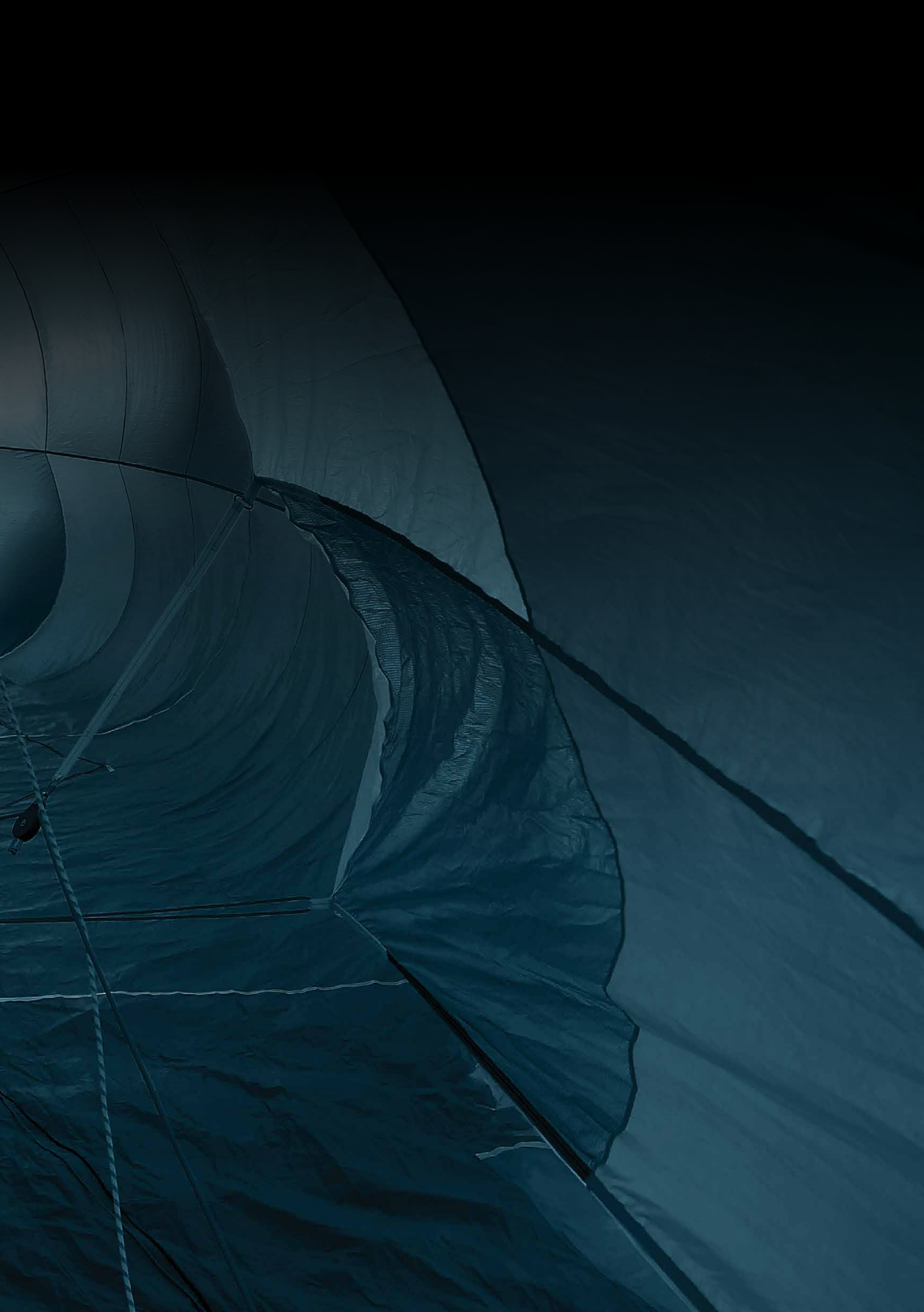
Term	Meaning								
Certificate of Registration holder	a certificate of registration (CofR) holder for a balloon, is an owner of a balloon who has applied for the balloon to be registered and is the nominated holder of the registration								
class of balloon	<table> <tr> <th>class of balloon</th><th>description of balloon</th></tr> <tr> <td>Class 1</td><td>Hot air balloons that have a volume of not more than 260 000 cubic feet</td></tr> <tr> <td>Class 2</td><td>Hot air balloons that have a volume of more than 260 000 cubic feet</td></tr> <tr> <td>Class 3</td><td>Gas balloons</td></tr> </table>	class of balloon	description of balloon	Class 1	Hot air balloons that have a volume of not more than 260 000 cubic feet	Class 2	Hot air balloons that have a volume of more than 260 000 cubic feet	Class 3	Gas balloons
class of balloon	description of balloon								
Class 1	Hot air balloons that have a volume of not more than 260 000 cubic feet								
Class 2	Hot air balloons that have a volume of more than 260 000 cubic feet								
Class 3	Gas balloons								
class B aircraft	a balloon or hot air airship is designated a class B aircraft for maintenance purposes								
commercial pilot	the holder of a commercial pilot (balloon) licence								
contracting state	a foreign country that is a party to the Chicago Convention								
equipment	any reference to equipment being required, fitted, carried or accessible means – equipment which is operative or serviceable								
ground support personnel	one or more persons assigned by the operator of a Part 131 aircraft to perform duties on the ground related to the operation of the aircraft at any time during initial set up, inflation, take-off, flight, retrieval, landing and pack up								
final reserve fuel	the calculated amount of usable fuel, expressed as a period of time, required to be remaining in the fuel tanks on completion of the final landing of a flight before ground handling								
flight	in the case of lighter-than-air aircraft, the operation of the aircraft from the moment when it becomes detached from the surface of the earth or from a fixed object on the surface of the earth until when it becomes again attached to the surface of the earth or a fixed object on the surface of the earth								
free flight time	untethered flight time in a balloon								
hot air airship	a power driven lighter-than-air aircraft where buoyancy is provided by hot air								
hot air balloon	a lighter-than-air aircraft that is not engine-driven and sustains flight through the use of an airborne heater								
in-company	<p>in relation to 2 or more Part 131 aircraft in flight, means such aircraft:</p> <ul style="list-style-type: none"> › that form a group and occupy a specific 3-dimensional volume of airspace and › each of whose pilots in command self-separates from the other group aircraft in the volume of airspace <p>It has the same meaning as flying 'in formation'</p>								
launch restraint	the temporary restraint of a free balloon before conducting a free flight								
manual	<p>means the CASA Recreational Ballooning Procedures Manual, as in force from time to time</p> <p>Note: The CASA Recreational Ballooning Procedures Manual is a modified version of the former ABF operations manual that was in force immediately before 2 December 2023. The CASA Manual is available on the CASA website Civil Aviation Safety Authority (casa.gov.au)</p>								

Term	Meaning
may	indicates an option in the context of the requirement
MBA	a mandatory broadcast area (MBA) is a volume of Class G airspace of defined lateral and vertical limits in which broadcast and other requirements apply. MBAs are specified in the AIP as in force from time to time
mixed balloon	a crewed, free balloon that derives its lift from a combination of heated air and non-flammable lighter than air gas
MOS	refers to the Part 131 or Part 91 Manual of Standards
must	indicates an obligation or necessity (i.e. a mandatory requirement)
night operations fuel	for a hot air balloon or hot air airship means the amount of fuel required to enable an aircraft, that is conducting a flight under the VFR at night, to remain airborne until conducting a landing by day
operations manual	the terms operations manual and exposition are synonymous
operator (of an aircraft)	<ul style="list-style-type: none"> › if the operation of the aircraft is authorised by an AOC – the holder of the AOC or › if the operation of the aircraft is not authorised by an AOC – the person, organisation or enterprise that makes the aircraft available to the aircraft's PIC for a flight (CASR Dictionary) › See also section 1.1
Part	unless otherwise specified refers to a part of the CASR
person	can include the pilot or an operator, a passenger, a ground support person, or another person
a pilot	refers to any flight crew member (not necessarily the pilot in command)
PIC (pilot in command)	the pilot designated as being in command and charged with the safe conduct of the flight
public gathering	an assembly of people at a place on the basis of a general public invitation to attend at that place, whether or not a charge is made for attendance
qualified	<p>a person who holds a qualification or authorisation issued by CASA under Part 5 of CAR or a Part 131 ASAO unless otherwise stated</p> <p><i>For a foreign registered aircraft operating in Australian territory, qualified means a qualification attained, or authorisation under, the laws of the state of registry of the aircraft operator.</i></p>
quick donning mask	<p>an oxygen mask that:</p> <ul style="list-style-type: none"> › is for a flight crew member's personal use and › within 5 seconds of it being deployed and ready for use, the flight crew member can, with 1 hand, place over the face, secure and seal
radio	as with other equipment, which is required to be fitted or carried, a reference to radio or a radio communications system means one which is operative. Where a radio is required the pilot must be qualified to use it (see 91.625)
regulations	<p>in general, this refers to the Australian civil aviation legislation.</p> <p>Specific reference is made to the Federal Aviation Authority (FAA) (United States), and European Aviation Safety Agency (EASA) (European) regulations where necessary</p>

Term	Meaning
SARTIME	the time nominated by a pilot for the initiation of SAR action if a report has not been received by the nominated unit
SARWATCH	the time for a SAR alert, based on: <ul style="list-style-type: none"> › full position reporting procedures or › scheduled reporting times (SKEDS) or › SARTIME
special flight permit	a special flight permit may be issued under regulation 21.200. It may be issued for one or more of the following purposes for an aircraft that may not, at the time, meet the applicable airworthiness requirements: <ul style="list-style-type: none"> › flying the aircraft to a base where repairs, alterations, or maintenance are to be performed, or to a point of storage › delivering or exporting the aircraft › production flight testing of new production aircraft › evacuating the aircraft from areas of impending danger › conducting customer demonstration flights in new production aircraft that have satisfactorily completed production flight tests › assisting in searching for, bringing aid to or rescuing persons in danger on a particular occasion › assisting in dealing with a state of emergency › operation of an aircraft at a weight in excess of its maximum certificated take-off weight for flight beyond the normal range over water, or over land areas where adequate landing facilities or appropriate fuel is not available. The excess weight that may be authorised under this paragraph is limited to the additional fuel, fuel-carrying facilities, and navigation equipment necessary for the flight
special VFR	to operate under the special VFR, the PIC of a Part 131 aircraft must: <ul style="list-style-type: none"> › be authorised by ATC and › operate by day and › conduct the flight clear of cloud and › maintain flight visibility of at least: <ul style="list-style-type: none"> » 1,600 m – for a height at or above 500 ft AGL » 100 m – for a height below 500 ft AGL
Subpart	unless otherwise specified, a subordinate part of Part 131 or Part 91
suitable landing area	a place where, in the reasonable opinion of the PIC given the prevailing conditions, the aircraft can be safely landed without causing a hazard to persons or property on the ground or on the aircraft
tethered flight time	any part of the flight time in the balloon during which the balloon is tethered
trip fuel	the amount of fuel required to enable a hot air balloon or hot air airship to fly from any point along a route until landing at a suitable landing area
VMC criteria	meteorological conditions expressed in terms of the flight visibility and distance from cloud (horizontal and vertical) for a class of airspace



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